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ABSTRACT

This curriculum guide focuses on the development of skills, processes, and competencies necessary for the K-6 social studies program. Divided into six sections, the guide provides objectives and activities for five sets of skills at each of the separate grade levels. Section one, the major portion of the guide, focuses on map and globe skills. It includes activities for such skills as direction, scale, location, symbols, and comparison and inference. Section two outlines objectives for student research and critical thinking skills. Emphasis is placed on using the library, taking notes, presenting oral reports, and writing reports. Section three gives examples of time and spatial relationship skills, including short activities on how to use the calendar and the meaning of chronological order. Section four presents sequential steps for accurate interpretation and construction of tables and graphs. Section five lists activities designed to develop skills in interpersonal relations and group participation. Finally, section six provides a taxonomy of various types of discussion questions and examination questions useful for developing the questioning skills of social studies teachers. (Author/DE)

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Skill Development In The K-6 Social Studies Program

Wisconsin Department of Public Instruction
Barbara Thompson, Ph.D., State Superintendent

SO 009 268

Prepared by

State of Wisconsin Social Studies Curriculum Study Committee

SKILL DEVELOPMENT IN THE K-6 SOCIAL STUDIES PROGRAM

Published by

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Barbara Thompson, Ph.D., State Superintendent

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Introduction

This guide concentrates on the network of learning skills, processes and competencies that can provide one helpful answer to the continuing development of better social studies programs in Wisconsin. The prime skills directly related to studying and understanding the socio-civic sphere as well as the social issues of our times are at the core of the skill-process approach to the social studies and its related supportive disciplines. These skills and competencies provide students with the tools to make "better sense" out of their social environments so as to become better decision-makers.

In addition to identifying social skills that students must learn in elementary school and then improve upon in high school, the committee has incorporated objectives, test items and activities for your consideration. In all of this work, the committee has argued that a program based on skill and competencies provides a good foundation on which any social studies design may build its emphasis and by which it can measure its success.

Thus, the committee believes that the development of a body of basic skills in the social studies program is fully as imperative as the development of fundamental concepts. Skills and concepts are closely interwoven. One depends upon the other. Skills unlock new concepts and therefore no skill can be left to chance. Through the use of skills, new information is received and conceptual change and growth is facilitated. Skills allow the class members to go even deeper for more information, rendering later performance more efficient. Just as concept development promotes a spiral in growth of knowledge from kindergarten through grade twelve, so skill development promotes parallel power to manipulate and accommodate such growth.

The nature of social studies requires a broad base of skills. Many reading and study skills are needed to locate, gather, analyze and organize information. Such skills are requisite in solution of problems and lead to further study and enrichment. Skills in inter-personal relationships are especially important in participating with others in the solution of society's problems. Concepts in geography and history cannot be well developed without skill in the use of the map, the globe, weather instruments, and proper interpretation of chronology and spatial relationship ideas. Unless these skills are learned and used by classroom members, full value will not be received no matter what instructional material is available.

Skills must be taught and used where there is a functional purpose. A teacher's first business in the social studies classroom is a knowledge of what skills are needed at a given developmental level in the pupil's growth, and what skills are related to the selected concepts to be developed at a given cognitive level. Each succeeding semester must reinforce and extend the basic skills. Thus, cultivating and maintenance of a skill are just as important as its introduction.

While this guide was designed basically for the K-6 social studies program, I would encourage middle school and high school social studies teachers to become familiar with its contents so as to build upon the ideas initiated herein. Finally, may I say that the State Social Studies Curriculum Study Committee is interested in any comments that Wisconsin social studies educators might have relative to this guide, particularly as such comments may help future developments of curricular and instructional materials.

It is appropriate at this time to thank the members of the sub-committee on skill development for preparing and field testing the material contained within this booklet.

Donald R. Thompson
Chairperson, Sub-committee
Skill Development, Racine Public Schools

John Popenfus	College of Racine
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I would also like to extend a special note of appreciation to Mrs. Mary Thompson and to Mrs. Rebecca Diller for help in the editing and assembling of this guide.

H. Michael Hartoonian, Ph.D.
Social Studies Specialist
State of Wisconsin

ASSUMPTIONS ABOUT SKILL DEVELOPMENT IN THE SOCIAL STUDIES PROGRAM

1) The incidental learning of skills does not produce effecient development of the skills need in modern society. A comprehensive skill program, planned in general outline and flexible in application, will encourage systematic as well as incidental teaching and learning of skills.

2) A planned program for skill development is needed to provide appropriate gradation of the student's experiences with various skills.

3) No skill or set of skills is 'learned' in one experience, in one week or even in one year. Once introduced and understood at the student's current level of maturity, skills must be used repeatedly and in different situations if they are to become presisting parts of the student's equipment. The teaching and learning of skills is a developmental process.

4) A planned program for the teaching and learning of skills is needed to help the student make optimum transfer of his or her skill learnings so that it becomes part of his or her customary behavior.

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PART ONE

MAP AND GLOBE SKILLS

Direction

Scale

Location

Symbols

Comparison and Inference

ASSUMPTIONS UNDERLYING MAP AND GLOBE SKILLS

1. That skills learned one year will be reviewed before new skills are introduced.
2. That each year students extend their skills, building on the skills learned in the past.
3. That students will learn skills more readily if the skills are put into a cultural, historical and environmental context.
4. That these skills become more useful and are more readily acquired when applied to the student's everyday needs and interests.
5. That teachers will not limit themselves to the activities suggested here in teaching these skills.
6. That the processes used to develop map and globe skills are an important part of the social studies curriculum.*

*See Part II of this guide.

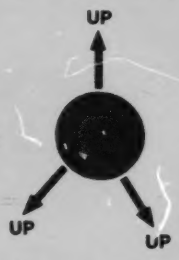
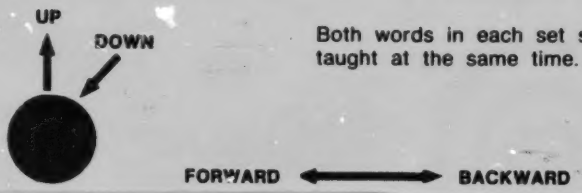
MAP AND GLOBE SKILLS CHART: KINDERGARTEN

MAJOR SKILL AREA	EXPLANATION	Kindergarten
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Shows on a globe that up is the direction away from the surface of the earth. 2. Shows on a globe that down is the direction toward the surface of the earth. 3. Correctly uses the following words dealing with direction: up-down; forward-backward.
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Accurately describes the size and relative position of objects in his or her environment by using the following words: larger-smaller, taller-shorter, higher-lower.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Distinguishes between land masses and water masses on a globe.
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Recognizes the globe as a model of the earth. 2. Identifies by color land and water masses on a globe.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	1. Determine which land masses and water masses seem larger and which seem smaller (compared to each other), i.e. Compare relative sizes of land masses and of water masses.

KINDERGARTEN

MAJOR SKILL AREA: Direction

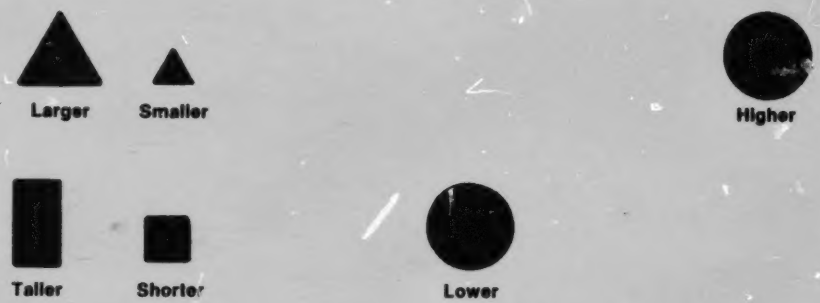
EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

SKILL	EXAMPLE (S)
1. Shows on a globe that up is the direction away from the surface of the earth.	 The student should be able to use the word *up* correctly in a sentence.
2. Shows on a globe that down is the direction toward the surface of the earth.	The student should be able to use the word *down* correctly in a sentence.
3. Correctly uses the following words dealing with direction: up-down; forward-backward.	 Both words in each set should be taught at the same time.

KINDERGARTEN

MAJOR SKILL AREA: Scale

EXPLANATION: Ability to recognize the scale of a map and to compute distances.

SKILL	EXAMPLE (S)
1. Accurately describes the size and relative position of objects in his environment by using the following words: larger - smaller, taller - shorter, higher - lower.	 These words pertain to the size of objects. These words pertain to relative position.

	ACTIVITY	PROCESSES
1 & 2	Use photos or slides from NASA of rockets, spaceships, the earth from space, etc. to show objects going up (away from earth) and down (towards earth). Use other illustrations such as see-saws, trees with roots. Ask students to think of things that go up and down in relation to the earth's surface.	Observation Classifying
3.	Use musical games to test students' understanding of words (students act out calls of forward, backward, up and down).	Communicating

	ACTIVITY	PROCESSES
1.	Use illustrations and games; ask students questions requiring them to figure out the meaning of the words. Example: Ask students to group books or themselves into categories of larger, smaller and taller, shorter.	Observation Classifying

KINDERGARTEN

MAJOR SKILL AREA: Location

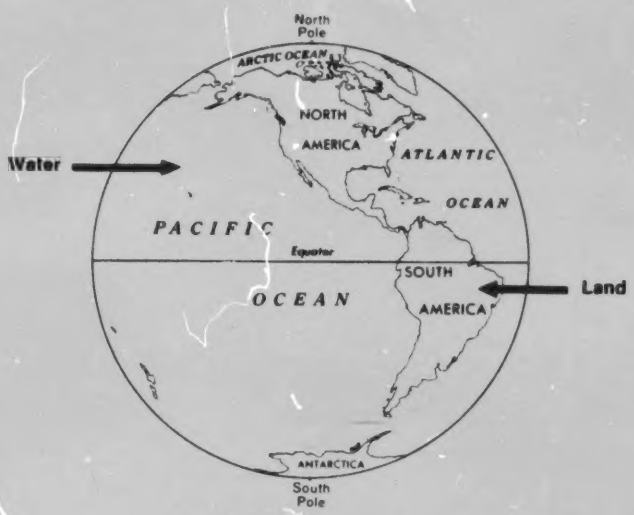
EXPLANATION: Ability to locate major features, both cultural and natural, in the world. Use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLE (S)
1. Distinguishes between land masses and water masses on a globe.	

KINDERGARTEN

MAJOR SKILL AREA: Symbols

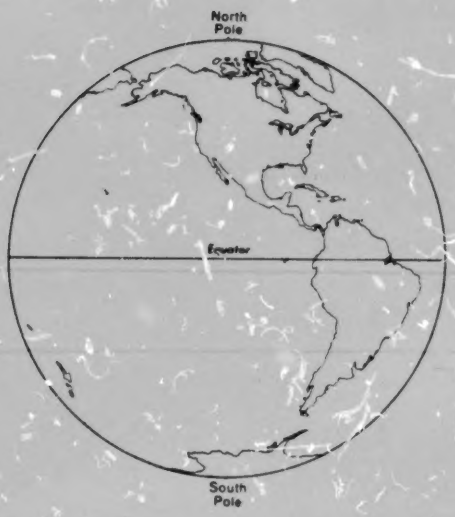
EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

SKILL	EXAMPLE (S)
1. Identifies by color land and water masses on a globe.	

All physical globes use the International Color Code.

ACTIVITY	PROCESSES
1. Play a game using various maps showing same land and water masses. Ask students to identify land and water masses on each map.	Observation

ACTIVITY	PROCESSES
1. Have students color in land and water masses on a dittoed sketch of a globe.	Observation

2. Recognizes the globe as a model of the earth.	

KINDERGARTEN

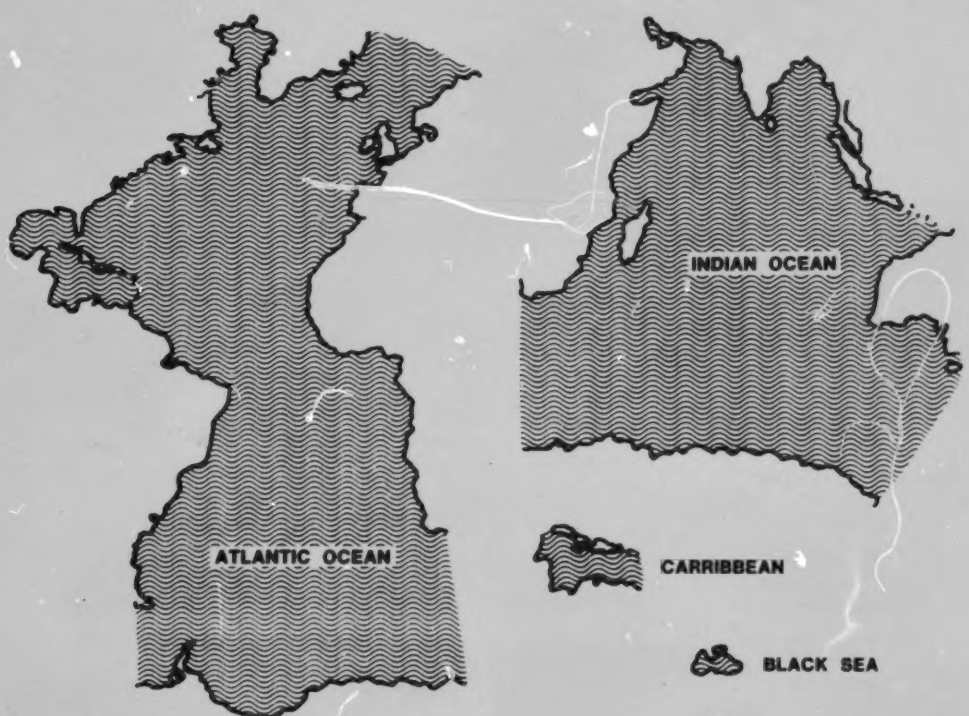
MAJOR SKILL AREA: Comparison and Inference

EXPLANATION: Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.

SKILL	EXAMPLE (S)
1. Compare relative sizes of land masses.	
2. Compare relative sizes of water masses.	

2. Explore the concept of the earth's roundness: Ask students: If you wanted to discover the shape of the earth, how would you do it? Tell story of the discovery of the earth's roundness. Show photographs from space illustrating the earth's roundness. Show students why the globe is the best model of the earth.	Inferring Observation

ACTIVITY	PROCESSES
1 & 2 Give students two maps, on one map have students color all the water masses in one color that would be considered larger and in another color all those considered smaller. Do the same on the other map for land masses.	Observation



MAP AND GLOBE SKILLS CHART: GRADE ONE

MAJOR SKILL AREA	EXPLANATION	Grade One
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Shows on a globe that north is the direction toward the north pole and south is the direction toward the south pole. 2. Identifies the north and south poles on a globe. 3. Understands differences between a map and a globe. 4. Identifies north and south poles on a world map. 5. Locates on a globe and world map four cardinal directions (N,S,E,W) 6. Uses the symbols N,S,E,W and places them correctly around the room. 7. Correctly uses the following words dealing with direction: left-right toward-away across-around
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Accurately describes the distance of objects in his or her environment by using the following words: closer-farther, a long way off-a short way off.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Distinguishes between land masses and water masses on a world map. 2. Locates the continent of North America on a globe or world map. 3. Locate land and water masses a long way off from North America and a short way off.
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Understands that real objects can be represented by pictures or symbols on a map. 2. Identifies the legend on various maps. 3. Distinguishes between a map and a globe and understands that each symbolizes the world.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	

GRADE ONE

MAJOR SKILL AREA: Direction

EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

SKILL	EXAMPLE(S)
1. Shows on a globe that north is the direction toward the north pole and south is the direction toward the south pole.	
2. Identifies the north and south poles on a globe.	
3. Understand differences between map and globe.	
4. Identify north and south poles on a world map.	
5. Locates on a globe and world map the four cardinal directions (north, south, east, west).	

ACTIVITY	PROCESSES
1 & 2. Read stories about people and/or animals and scenery of the north and south poles so that students have a context in which to learn the directions north and south and the location of the poles.	Observation
4. Read stories about people and/or animals and scenery of the north and south poles so that students have a context in which to learn the directions north and south and the location of the poles.	Observation
5. Look at world maps turned in different directions and have the students place the letters N, S, E, W on each correctly.	Observation

6. Uses the symbols N, S, E, W, and places them correctly around the room.	The capital letters N, S, E, and W can be cut out of colored construction paper or tagboard.
7. Correctly uses the following words dealing with directions: left-right; toward-away; across-around.	Both words in each set should be taught at the same time.

GRADE ONE

MAJOR SKILL AREA: Scale

EXPLANATION: Ability to recognize the scale of a map and to compute distances.

SKILL	EXAMPLE (S)
1. Accurately describes the distance of objects in the environment by using the following words: closer-farther, a long way off-a short way off.	Both words in each set should be taught at the same time.

GRADE ONE

MAJOR SKILL AREA: Location

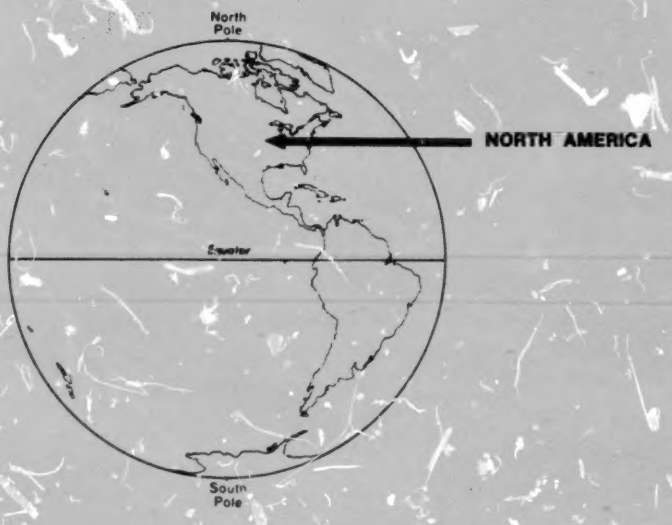
EXPLANATION: Ability to locate major features, both cultural and natural, in the world. use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLE (S)
1. Distinguishes between land masses and water masses on a world map.	

6. Cut letters N, S, E, W out of construction paper; place correctly around the room. Next to each put pictures of animals, people or scenery suggesting the areas (or pictures such as the sun rising in the east and setting in the west).	Observation Classifying

ACTIVITY	PROCESSES
1. Learn by acting out, pictures and/or questions which help students learn the proper use of the words.	Observation Inferring

ACTIVITY	PROCESSES
1. Students are divided into small groups and are given several maps (different size or proportions or different amounts of detail shown); within their groups they work together to color in water masses and land masses (one color for water, one for land). Then they locate North America on the map. On the same map, they put an X on bodies of water and land masses a long way off from North America and a 0 on land and water masses close to North America.	Observation Classifying

2. Locates the continent of North America on a globe or world map.	
3. Locate land and water masses a long ways off and a short ways off from North America.	

GRADE ONE

MAJOR SKILL AREA: Symbols

EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

SKILL	EXAMPLE (S)
1. Understands that real objects can be represented by pictures or symbols on a map.	
2. Identifies the legend on various maps.	The student is asked only to identify the map legend, not interpret it.

2 & 3	Students are divided into small groups and are given several maps (different size or proportions or different amounts of detail shown); within their groups they work together to color in water masses and land masses (one color for water, one for land). They locate North America on the map. On the same map, they put an X on bodies of water and land masses a long way off from North America, and a 0 on land and water masses close to North America.	Observation Classifying

	ACTIVITY	PROCESSES
1.	Give students a list of words or pictures which illustrate certain words (mountains, grassland, lakes, rivers, etc.) and ask students to make up symbols for each word. Think up symbols for the North and South Poles which relate to environment or animal life at each.	Communicating

3. Distinguishes between a map and a globe and understands that each symbolizes the world or part of it.

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3. Make a map and a globe (paper mache) and identify differences between the two. What are the advantages of each?	Observation Inferring

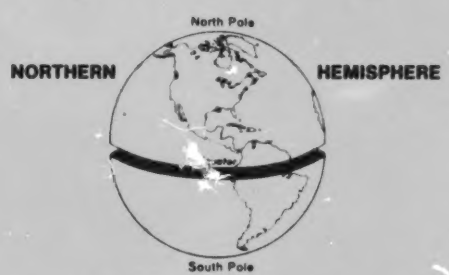
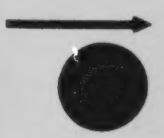
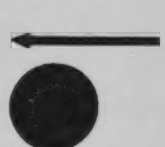
MAP AND GLOBE SKILLS CHART: GRADE TWO

MAJOR SKILL AREA	EXPLANATION	Grade Two
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Identifies the equator on a world map or globe. 2. Shows on a globe or world map that the equator divides the earth into a northern and southern hemisphere. 3. Uses four cardinal directions to identify places (islands, towns, etc.) relative to Racine, Wisconsin. 4. Use N,S,E,W outside school building correctly. 5. Correctly uses the following words dealing with directions: clockwise and counterclockwise. 6. Demonstrate with globe the earths rotation.
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Measures distance in the neighborhood by blocks from home to school, to the firestation, to the store, etc. 2. Realizes that long distances in the neighborhood or city distances on a map. 3. Recognizes that states are smaller than counties.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Locates and identifies the United States on a world map and globe. 2. Locates Wisconsin on a map of the United States. 3. Locates islands on a map or globe.
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Recognizes that a symbol may be a drawing, a color, or a pattern. 2. Understands that maps symbolize places and symbolically give information 3. Identifies the shapes of states, countries. 4. Understands that symbols may or may not look like that which they symbolize. 5. Locates cities on various maps. 6. Correlates shadings of the International Color Code with elevation.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	1. Locate Madison on two maps of different scales. Compare the distance (scale) between two cities on one map with the other.

GRADE TWO

MAJOR SKILL AREA: Direction

EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

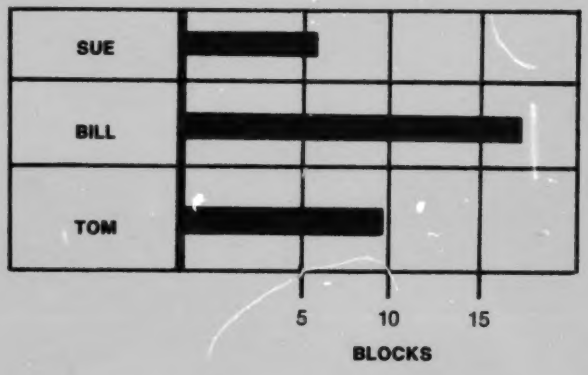
SKILL	EXAMPLE (S)
1. Identifies the equator on a world map or globe.	
2. Shows on a globe or world map that the equator divides the earth into a northern and a southern hemisphere.	 SOUTHERN HEMISPHERE
3. Use four cardinal directions to identify places relative to Racine, Wisconsin.	
4. Use N, S, E, W outside school building correctly.	Take students outside to identify directions
5. Correctly uses the following words dealing with direction: clockwise and counterclockwise.	  CLOCKWISE COUNTERCLOCKWISE To go around something while keeping it at all times on one's *right* is to go around *clockwise*, whereas to travel around the same object while it remains on one's *left* is to go around *counterclockwise*.
6. Demonstrate with a globe, the direction of the earth's rotation.	

ACTIVITY	PROCESSES
1. Make a paper mache model of the world that comes apart at the equator. Discuss origin of the word equator (equal) to help get across the idea that it divides the world in half.	Observation
2. Have students locate the north and south poles on their model; discuss origin or word hemisphere (again referring to halves), label northern and southern hemisphere on map.	Observation
3. Think of all the ways north, south, east and west are used everyday (street signs, sections of town, stories, songs, weather reports on TV). List places in Wisconsin that students have or would like to visit, locate on map of Wisconsin and identify direction from your town. Play a game that involves looking at a map of Wisconsin, describing a place in one or two sentences, and asking other students to identify the direction from Racine, for example, and the place.	Classifying Observation Inferring
4. First take students outside and identify N, S, E, W. Then, indoors, ask them to fill in a dittoed map labeling one or two landmarks in each direction.	Observation
5. Play a musical game on a big outline of a clock.	Observation

GRADE TWO

MAJOR SKILL AREA: Scale

EXPLANATION: Ability to recognize the scale of a map and to compute distances.

SKILL	EXAMPLE (S)
1. Measures distance in the neighborhood by blocks from home to school, to the fire station, to the store, etc.	A chart could be constructed indicating the distance in blocks (miles) each student lives from school. 
2. Realizes that long distances in the neighborhood or city can be represented by short distances on a map.	A simple neighborhood map could be drawn on the chalkboard indicating long neighborhood distances are actually short distances on a map.
3. Recognize that states are smaller than countries.	

GRADE TWO

MAJOR SKILL AREA: Location

EXPLANATION: Ability to locate major features, both cultural and natural, in the world. Use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLE (S)
1. Locates and identifies the United States on a world map and globe.	

ACTIVITY	PROCESSES
1. Have students walk various distances and make maps to record these distances.	Measuring Communicating
2. Have students walk various distances and make maps to record these distances.	Measuring Communicating
3. Cut out shapes of Wisconsin and one or two other states. Fit into a cutout of the United States.	Observation

ACTIVITY	PROCESSES
1. Give students an outline of the world and ask them to cut out shapes of the United States and Wisconsin in different colors and paste properly on outline map.	Observation

2. Locates Wisconsin and Racine on a map of the United States.	
3. Locates islands on a map or globe.	
4. Understand that symbols may or may not look like that which they symbolize.	Symbols which do: TREES (FOREST) Symbols which do not: CITY

GRADE TWO

MAJOR SKILL AREA: Symbol

EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

SKILL	EXAMPLE (S)
1. Recognizes that a symbol may be a drawing, a color, or a pattern.	DRAWING COLOR PATTERN

2. Give students an outline of the world and ask them to cut out shapes of the United States and Wisconsin in different colors and paste properly on outline map.	Observation
3. Read stories characterizing some of the islands and their location; have students try to find them on the map from the description and their knowledge of north, south, east and west.	Inferring
4. Look at a map with a number of different symbols on it; ask students to group those which look somewhat like that which they symbolize, and those which don't look like that which they symbolize.	Observation

ACTIVITY	PROCESSES
1. Hold up drawings, colors and patterns and ask students what they suggest to them. Ask students to make up symbols for railroads, etc. Help students distinguish between ordinary pictures and symbols.	Observation Inferring

2. Understand that maps symbolize *places* and symbolically give information (rainfall).	
3. Learn to identify the shapes of specific states and countries.	
4. Locates cities on various maps.	 The student is asked only to locate cities, not identify them.
5. Correlates shadings of the International Color Code with elevation.	 Most physical maps use the International Color Code. The student should become aware that different colors indicate different elevations on a map. At this grade level colors and the corresponding elevation should NOT be memorized.

GRADE TWO

MAJOR SKILL AREA: Comparison and Inference

EXPLANATION: Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.

SKILL	EXAMPLE (S)
1. Locate Madison and Milwaukee on two maps of different scale; compare distances (scale) between the two on each map.	

2 & 3 Cut out and/or draw on ditto shapes of Wisconsin, the United States and other states and have students identify. Cut out different sizes of Wisconsin and group with states of other shapes. Ask students to pick out all the shapes that symbolize Wisconsin.	Observation
4. Put in the context of news headlines or places people have visited.	
5. Have students color in a simple map of an area which they can also see the topography (photos, etc) so they get a sense of the meaning of elevation.	Observation

ACTIVITY	PROCESSES
1. Use the overhead projector and ask students why the distances seem different and if they really are.	Observation

GRADE TWO

SUMMARY PROJECT

This is your first chance to walk home on your own. Explain in what direction you would go. How long would it take you. Describe another route you could take and how long it would take. Draw a map so that your friend could find his/her way to your home from school. Put symbols on the map which will help your friend (landmarks, danger signals, etc.).

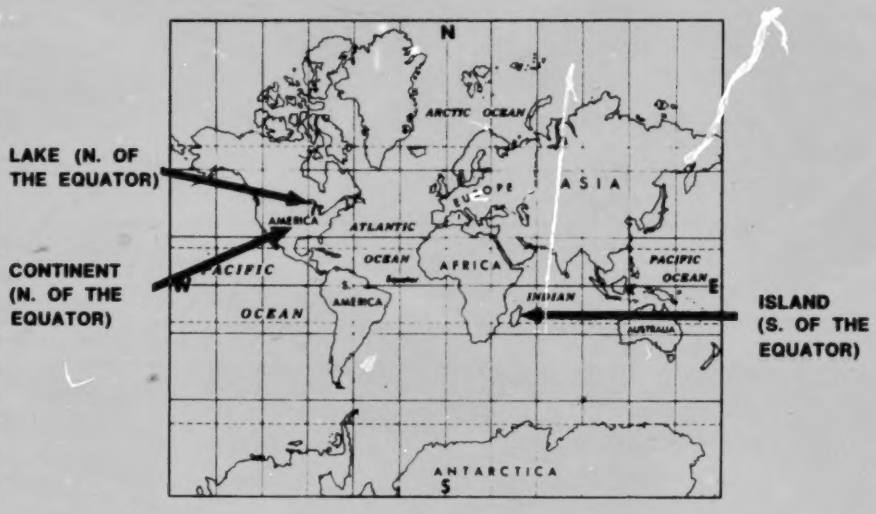
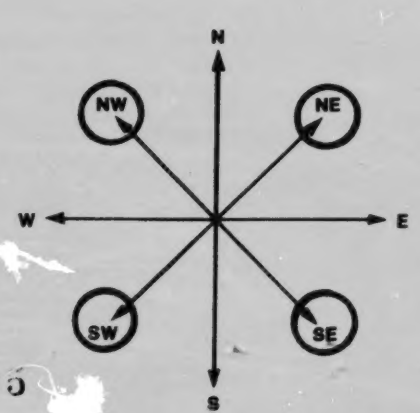
MAP AND GLOBE SKILLS CHART: GRADE THREE

MAJOR SKILL AREA	EXPLANATION	Grade Three	
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Locates continents, islands, and lakes on the globe or world map with reference to the equator (e.g. north of it or south of it). 2. Shows on a world map or globe that the prime meridian divides the earth into an eastern and western hemisphere. Identify which is which. 3. Uses the north arrow on a map as a direction finder.	4. Locates on a globe and world map the inbetween directions (NE, SE, NW, SW) 5. Constructs a simple school or neighborhood map which is properly oriented to a direction. 6. Tells the cardinal direction of one place from another.
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Expresses time as related to distance: relative time it takes traveling from home to school, to the fire station, to the store, etc. 2. Recognizes the similarity between an area first introduced on a globe and the same area shown on a map. 3. Recognizes that cities, states, countries, continents are different sizes.	4. Makes simple large scale maps of a familiar area, classroom, neighborhood, etc. 5. Explains that a globe is a model of earth, but sometimes a map can be more useful than a globe because it can show details and can be folded.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Construct a simple school map locating specific places on it. 2. Locates and identifies the three big oceans: Atlantic, Pacific and Indian. 3. Locates Lake Michigan on a globe or world map.	4. Locates rivers on a map and globe. 5. Calls the earth's largest land areas continents, and the earth's largest water areas oceans. 6. Locates and distinguishes between states and cities on a map of the United States.
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Interprets legend and identifies capital cities on a population map. 2. Makes maps of simple familiar areas and uses symbols to represent desks, houses etc.	3. Interprets basic map symbols.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	1. Infers from a map or maps why cities are located where they are. 2. Compares symbols on one map to those on another.	

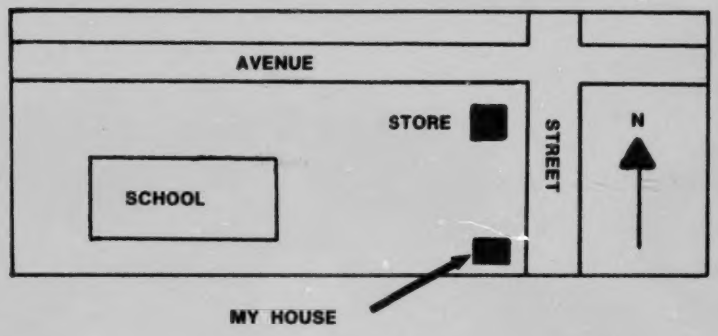
GRADE THREE

MAJOR SKILL AREA: Direction

EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

SKILL	EXAMPLE (S)
1. Locates continents, islands, and lakes on the globe or world map with reference to the equator (e.g. north of it or south of it).	 LAKE (N. OF THE EQUATOR) CONTINENT (N. OF THE EQUATOR) ISLAND (S. OF THE EQUATOR) N ARCTIC OCEAN EUROPE ASIA ATLANTIC OCEAN AFRICA PACIFIC OCEAN INDIAN OCEAN AUSTRALIA S. AMERICA ANTARCTICA W E S
2. Shows on a world map or globe that the Prime Meridian divides the earth into an eastern and western hemisphere.	
3. Uses the north arrow on a map as a direction finder.	
4. Locates on a globe and world map the inbetween directions (N.E., S.E., N.W., S.W.)	

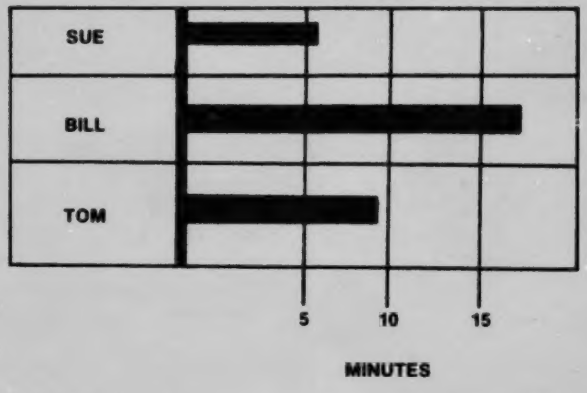
ACTIVITY	PROCESSES
1. Read short stories or descriptions of countries, etc. In some cases, based on the information in the stories, have students determine whether the continent is in the northern or southern hemisphere. Then locate on map.	Observation Inferring
2. Make a paper mache globe which comes apart at the prime meridian. Label the eastern and western hemisphere. Name one country in each.	Observation
4. Color a map for the in-between directions (a different color for each section). Name one country in each direction.	Observation

5. Constructs a simple school or neighborhood map which is properly oriented to a direction.	
6. Tells the cardinal direction of one place from another.	 New York is east of Kansas City.

GRADE THREE

MAJOR SKILL AREA: Scale

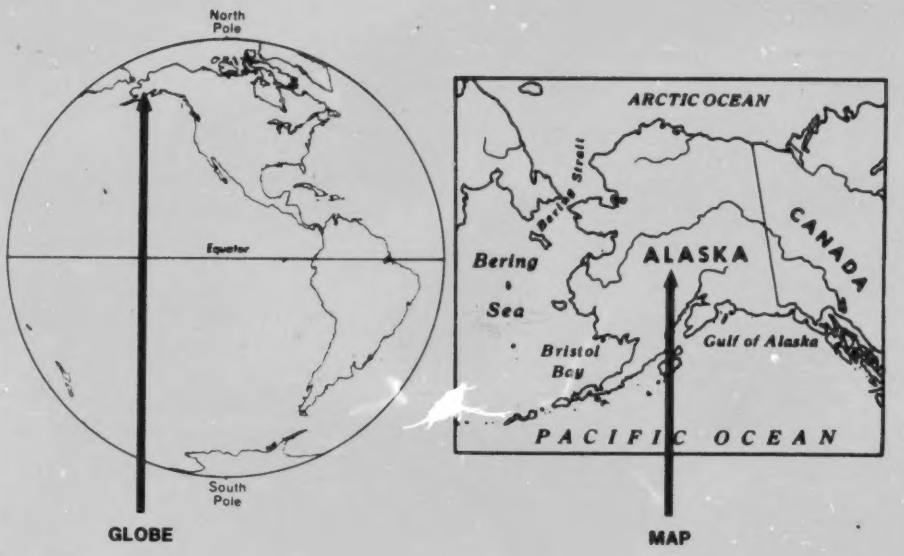
EXPLANATION: Ability to recognize the scale of a map and to compute distances.

SKILL	EXAMPLE (S)
1. Expresses time as related to distance: relative time it takes traveling from home to school, to the fire station, to the store, etc.	A chart could be constructed indicating the amount of time it takes for each student to travel to school. 

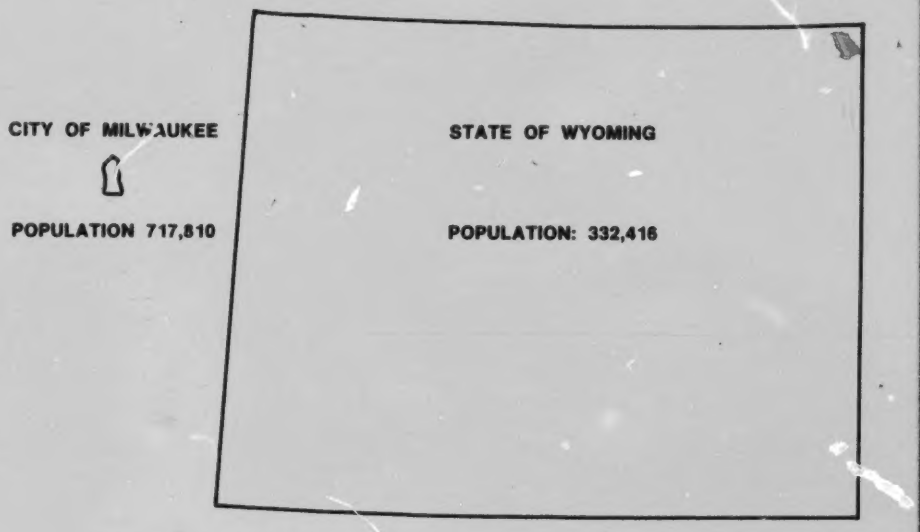
6. On a school map that is constructed, describe the cardinal direction of one place to another.	Observation

ACTIVITY	PROCESSES
1. On the map constructed for directional skills or on map for Scale #4, write in the time it takes walking, riding a bike, and driving from school to several different places (home, store, friend's home, etc.).	Measuring Communicating

2. Recognizes the similarity between an area first introduced on a globe and the same area shown on a map.

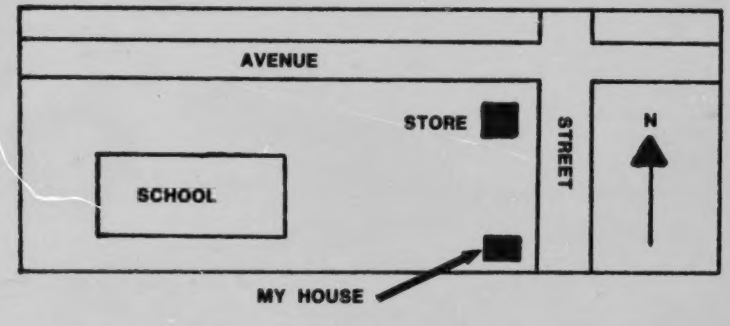


3. Recognize that cities, states and countries are often different sizes but some cities can be as large as other states (but not larger than states in which they are located).



Illustrate with population and area or whatever examples best fit throughout the world.

4. Makes simple large scale maps of a familiar area, classroom, neighborhood, etc.



Some attempt should be made by the students to recognize scale on the maps they have drawn.

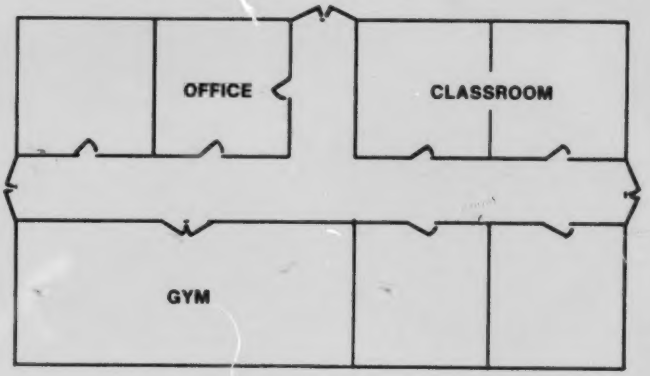
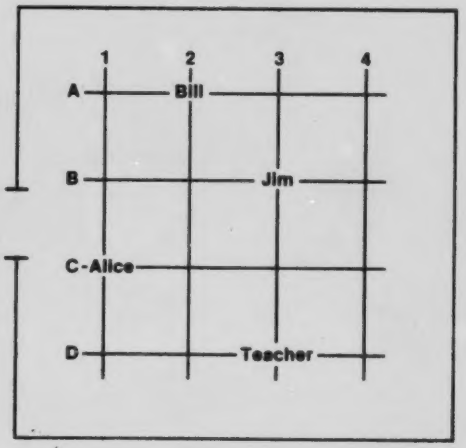
2. Show picture map of people from both the same and different points going to the same place in different amounts of time via different means of transportation. Figure out the number of miles each distance is, providing information on how far one can go in a certain amount of time via certain transportation.	Measuring Communicating
3. Cut out shapes of countries, states and cities to fit into a map of the world to see the relative sizes of each. Answer questions such as: why is _____ city larger (in area) than the state of Rhode Island (for example)? Or, why is the country of _____ smaller than the state of California (for example)? Students should draw upon their knowledge of climate, location, etc. to answer.	Observation Inferring

5. Explains that a globe is a model of the earth, but sometimes a map can be more useful than a globe because it can show details and can be folded.	MAP GLOBE

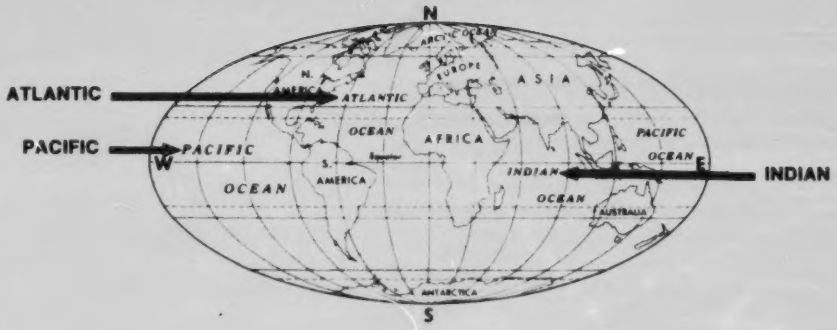
GRADE THREE

MAJOR SKILL AREA: Location

EXPLANATION: Ability to locate major features, both cultural and natural, in the world. Use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLES (S)
1. Construct a simple school map locating specific places on it.	
Construct a simple map of a classroom, locating people in the class by using a grid system.	 Bill is located at 2A, Jim is located at 3B, etc

2. Locates and identifies the three big oceans: Atlantic, Pacific, and Indian.



3. Locates Lake Michigan on a globe or world map.

4. Locates rivers on a map and globe.

MAP SYMBOLS

5. Calls the earth's largest land areas continents, and the earth's largest water areas oceans.

The student is asked only to call the earth's largest land areas *continents* and the earth's largest water areas *oceans*, not to identify them.

6. Locates and distinguishes between states and cities on a map of the United States

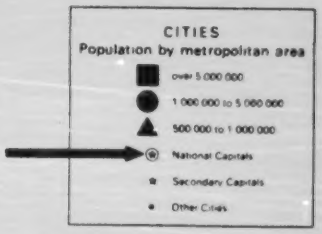
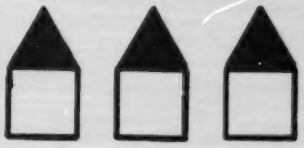
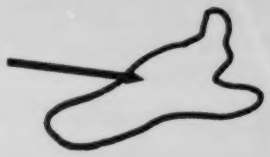
There are many cities in a state. There are fifty states in the United States. The United States is a country.

2., 3. & 4. Point to bodies of water on maps. Read or tell stories about these bodies of water; read descriptions of animal life, ecology, how they are useful to humans. Ask questions such as: If you wanted to get from one to another, how would you go? How long would it take (figure out miles from one to another)? Which is closest to Lake Michigan? Which is farthest?	Observation Measuring Inferring
6. Identify a few states and cities that are in the news headlines, discuss the issues, locate on map and speculate about the connection between their location and the related news item (oil spill off the coast of a city in California for example).	Observation Inferring

GRADE THREE

MAJOR SKILL AREA: Symbols

EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

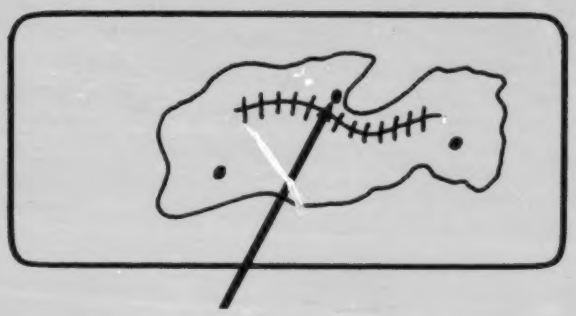
SKILL	EXAMPLE (S)
1. Interprets legend and identifies capital cities on a population map.	 **MAP LEGEND**
2. Makes maps of simple familiar areas and uses symbols to represent desks, houses, etc.	 **HOUSES** **DESKS**
3. Interprets basic map symbols.	**CITY** **RAILROAD TRACK** **RIVER** **LAKE** 

ACTIVITY	PROCESSES
2. Combine with direction and scale maps.	
3. Use flash cards to interpret then go to maps and read.	Observation Inferring

GRADE THREE

MAJOR SKILL AREA: Comparison and Inference

EXPLANATION: Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.

SKILL	EXAMPLE (S)
1. Infers from a map or maps why cities are located where they are.	 This city is located near a railroad and a source of water transportation.
2. Compare symbols on one map to those on another.	

ACTIVITY	PROCESSES
1. Combine with location skill #6. Begin to learn some Wisconsin history (why Eau Claire developed; Rice Lake, Milwaukee, etc.).	Inferring Interpreting Data
2. Ditto maps and have students circle symbols for each map that are the same using different colors for each symbol (RR on all maps will be circled with black for example). List symbols that are different (cities on one map may be designated by a circle, on another by a square).	Observation

GRADE THREE

SUMMARY PROJECT

Have students plan a trip to another city in another state. Locate it on a map, determine how long it will take to get there, what direction one has to go to get there, what the climate and geography is like, why it grew up where it did, what are the main ways people make a living there; make up symbols which tell something about the city; determine how close it is to the capital city, to bodies of water, mountains; what forms of recreation are available.

ANSWER: If you could change the city in any way, how would you and why?

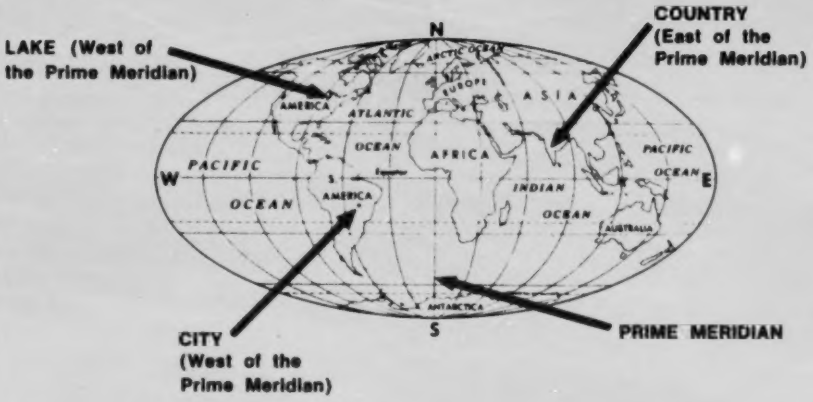
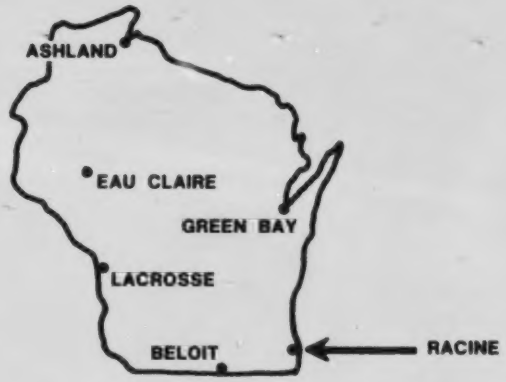
MAP AND GLOBE SKILLS CHART: GRADE FOUR

MAJOR SKILL AREA	EXPLANATION	Grade Four	
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Locates countries, cities, and lakes on a globe or world map with reference to the prime meridian (e.g. east of it or west of it). 2. Locates continents, islands, etc. on globe or world map with reference to whether they are in the eastern or western hemisphere.	3. Orients all maps correctly to the north. 4. Designates specific areas of a country, state or city by accurately using the cardinal and/or inbetween directions. 5. Follow highways on a road map, north-south and east-west. 6. Tells the direction on one place from another.
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Identifies the scale of miles on a map. 2. Estimates, under the guidance of a teacher, distance between places by using the scale of miles on a map. 3. Recognizes that a globe shows a distance, size, and shape more accurately.	4. Recognizes the same map area when drawn to different scale. 5. Understands that large-scale maps show more detail than small-scale maps.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Locates the Arctic and Antarctic Circles, Tropic of Cancer, Tropic of Capricorn and the Equator on a world map or globe. 2. Locates mountains and/or mountain ranges on a map or globe. 3. Defines and locates peninsulas on a map or globe.	4. Locates and distinguishes between continents and countries on a world map or a globe. 5. Defines and locates Temperate and Torrid Zones on a world map or globe. 6. Locates the continents of North and South America on a world map or globe.
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Reads the titles of particular maps. 2. Interprets map legend for a particular purpose (e.g. the amount of rainfall at a given location, the population of cities, etc.)	3. Identifies and distinguishes between county, state, and national boundary lines. 4. Locates and identifies highways on various maps.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	1. Recognizes that there are many kinds of maps for many uses, and selects the best map for the purpose at hand. 2. Identifies an occupation that requires the use of maps. 3. Understands that the only true representation of the earth is a globe.	4. Realizes that Northern and Southern Hemisphere seasons are opposite. 5. Correlates temperature with latitude and elevation. 6. Translates geographic data into simple bar graphs.

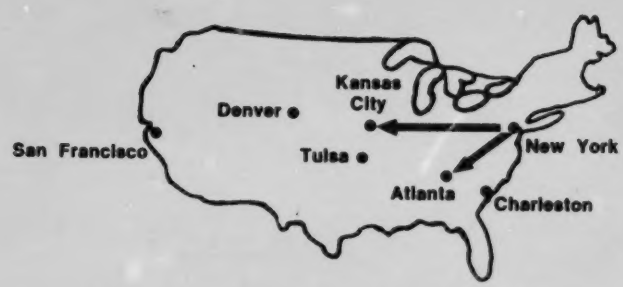
GRADE FOUR

MAJOR SKILL AREA: Direction

EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

SKILL	EXAMPLE (S)
1. Locates countries, cities, and lakes on a globe or world map with reference to the prime meridian (e.g. east of it, or west of it.)	
2. Locate continents, islands, etc. on a globe or map with reference to whether they are in the eastern or western hemisphere.	
3. Orients all maps correctly to the north.	The student should be able to orient the map so that north on the map corresponds with true north in the classroom.
4. Designates specific areas of a country, state, or city by accurately using the cardinal and/or inbetween directions.	
5. Follow highways on a road map - north/south and east/west highways.	Use Wisconsin Road Map

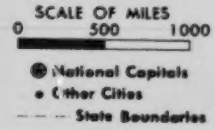
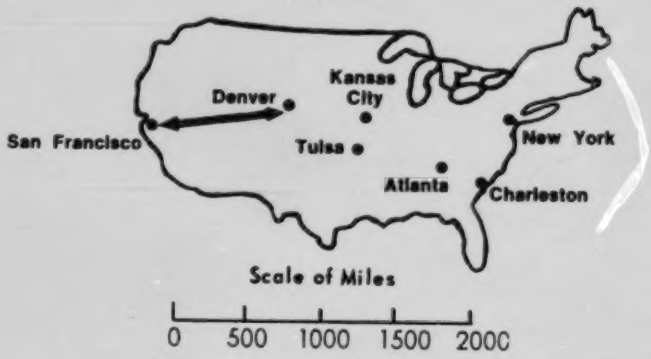
ACTIVITY	PROCESSES
1 & 2 Read stories and descriptions that refer to easterners and westerners. Locate the specific country that the people you read about are from. Discuss prejudices and stereotypes about easterners and westerners (within the United States and throughout the world). Use maps, slides, pictures to give students a sense of the differences between east and west culturally and environmentally. Ask students in what way the stereotypes and/or prejudices about easterners and westerners are connected with the physical and cultural geography of the hemisphere or region (Example: ten gallon hats on westerners because of the hot sun, not much shade.)	Observation Inferring
4. Talk about regions of Wisconsin in terms of Wisconsin history (which was settled first by Indians, by White people, etc.)	Observation
5. Follow a highway map of Wisconsin to places studying for Wisconsin history, or places have or would like to visit. Put in terms of taking a trip and describe how to get there to a friend.	Observation Measuring Communicating

6. Tells the direction of one place from another.	 Kansas City is West of New York. Atlanta is Southwest of New York. The student should be able to use both cardinal and inbetween directions accurately.

GRADE FOUR

MAJOR SKILL AREA: Scale

EXPLANATION: Ability to recognize the scale of a map and to compute distances.

SKILL	EXAMPLE (S)
1. Identifies the scale of miles on a map.	
2. Estimates, under the guidance of a teacher, distances between places by using the scale of miles on a map.	 The distance between San Francisco and Denver is approximately 1000 miles.

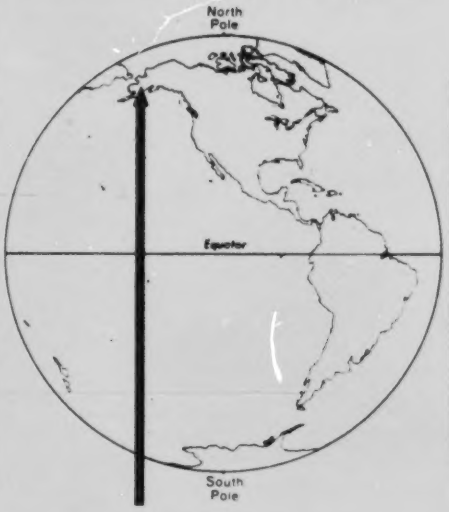
6. Use the same map and places as in #5 and tell the directions from one city or town to another.	Observation

ACTIVITY	PROCESSES
1 & 2 Use the same highway map as in Directional skills and estimate the distance in miles to various locations and how long it might take to get there by car.	Measuring Communicating

3. Recognize that a globe shows distance, size, and shape more accurately than a flat map.

All flat maps distort the part of the earth they show. The larger the surface area they try to show, the greater the distortion.

4. Recognizes the same map area when drawn to different scale.



5. Understands that large-scale maps show more detail than small-scale maps.

SMALL SCALE (less detail)

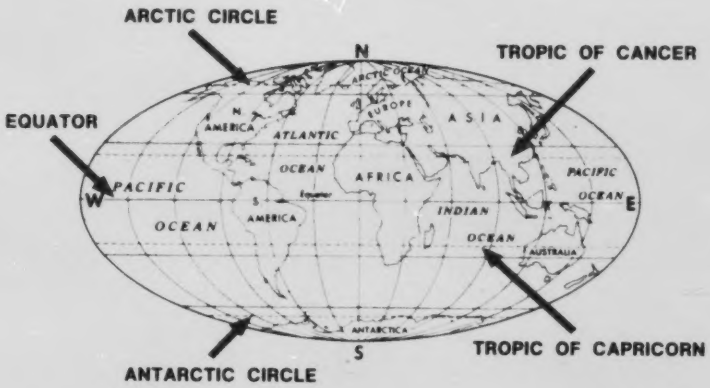
4 & 5	Compare highway map and a map in an atlas of Wisconsin. Look at a specific area that students are studying for Wisconsin history on a small scale map. Have them focus on a smaller area and try to draw a larger scale map based on the small scale map and on information they have learned in studying the area.	Observation Inferring Predicting

LARGER SCALE (more detail)

GRADE FOUR

MAJOR SKILL AREA: Location

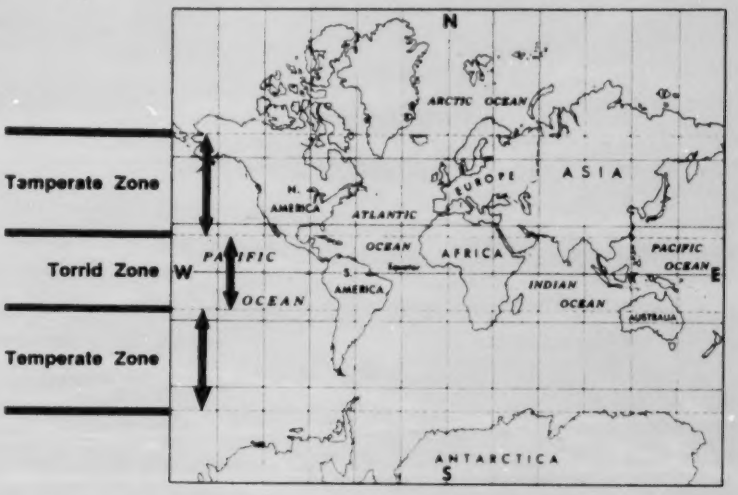
EXPLANATION: Ability to locate major features, both cultural and natural, in the world. Use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLE (S)
1. Locates the Arctic and Antarctic Circles, Tropic of Cancer, Tropic of Capricorn, and the Equator on a world map or globe.	
2. Locates mountains and/or mountain ranges on a map or globe.	
3. Defines and locates peninsulas on a map or globe.	PENINSULA: A piece of land almost surrounded (on 3 sides) by water.

	ACTIVITY	PROCESSES
1 - 6	Read about environment, plant and animal life of each place; before identifying the place, ask students to try to figure out where (at least in terms of hemispheres) this place is located. Locate on maps. Show pictures and slides of mountain ranges; locate on regular map and on a relief map. Ask students to compare and contrast places that are in the same and in different hemispheres.	Observation Inferring

4. Locates and distinguishes between continents and countries on a world map or globe.

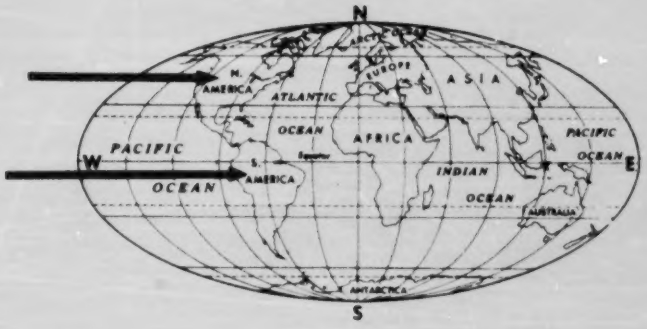
5. Defines and locates Temperate and Torrid Zones on a world map or globe.



TEMPERATE ZONE: The area or region between the Tropic of Cancer and the Arctic Circle and between the Tropic of Capricorn and the Antarctic Circle.

TORRID ZONE: The area or region between the Tropic of Cancer and the Tropic of Capricorn.

6. Locates the continents of North and South America on a world map or globe.

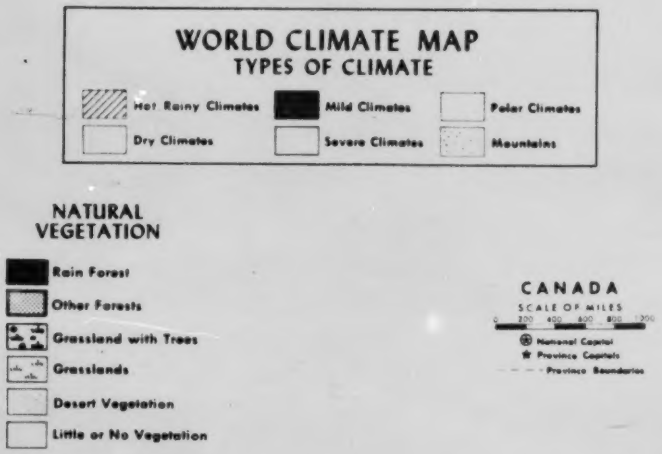
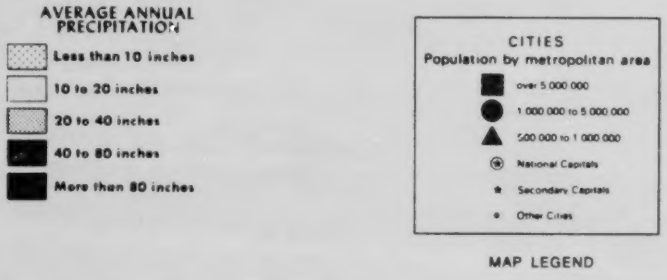
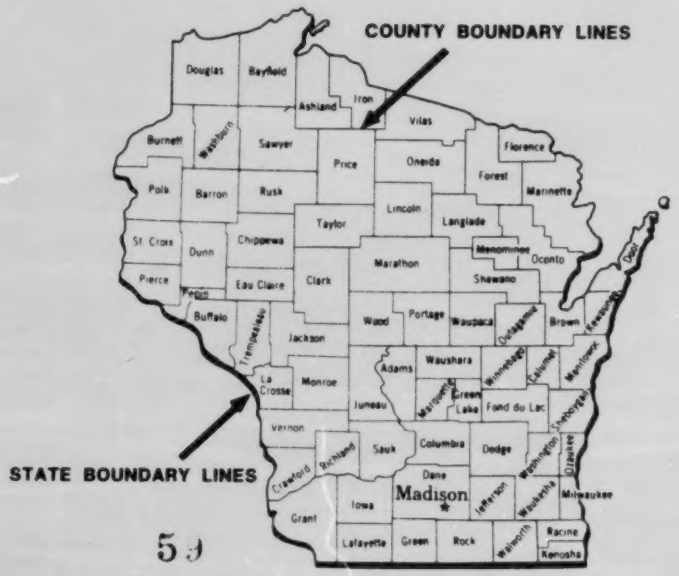


55

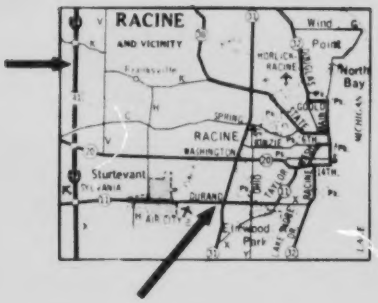
GRADE FOUR

MAJOR SKILL AREA: Symbols

EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

SKILL	EXAMPLE (S)
1. Reads the titles of particular maps.	
2. Interprets map legend for a particular purpose (e.g. the amount of rainfall at a given location, the population of cities, etc.)	
3. Identifies and distinguishes between county, state, and national boundary lines.	

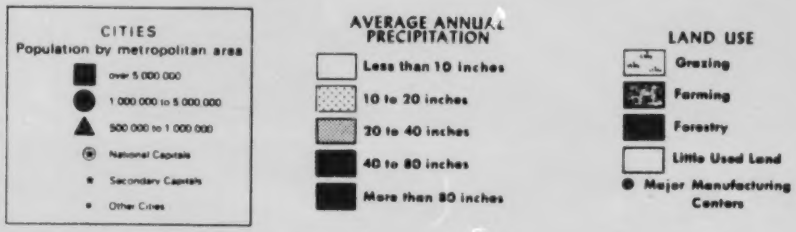
ACTIVITY	PROCESSES
1 & 2 Put in the context of Wisconsin history. Dig up old lumbering and mining maps as well as recent maps which show different aspects of Wisconsin (Dairying). Have students interpret maps.	Observation

4. Locates and identifies highways on various maps.	

GRADE FOUR

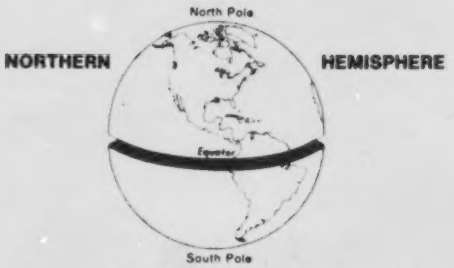
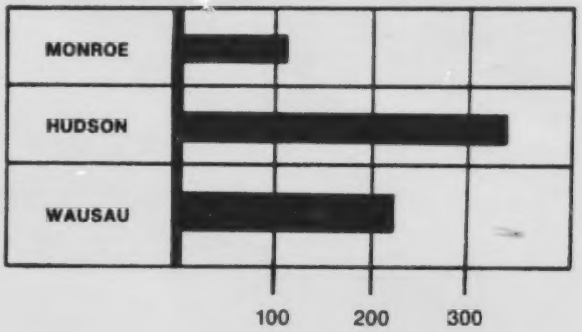
MAJOR SKILL AREA: Comparison and Inference

EXPLANATION: Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.

SKILL	EXAMPLE (S)
1. Recognizes that there are many kinds of maps for many uses, and selects the best map for the purpose at hand.	 MAP LEGEND
2. Identifies an occupation that requires the use of maps.	The student should be able to identify an occupation in which maps play a vital role (i.e. airline pilot, ship's captain, truck driver, police department, travel agent, etc.).
3. Understands that the only true representation of the earth is a globe.	

4. Combine with Directional skills activity regarding highway maps.	Observation

ACTIVITY	PROCESSES
1. Ask questions about Wisconsin history and/or current events; have students look at and/or draw maps to answer the questions (Example: How much of Wisconsin was forested in the 1600's? or Where did most of the milk strike activity take place in 1967-68?).	Observation Interpreting Data
3. Look at pictures from space to understand why.	Observation

4. Realizes that northern and southern hemisphere seasons are opposite.	 SOUTHERN HEMISPHERE
5. Correlates temperature with latitude and elevation.	Generally speaking, as latitude (distance north or south of the equator, measured in degrees) and elevation (height above sea level, measured in feet) increase, temperature decreases.
6. Translates geographic data into simple bar graphs.	 MILES FROM RACINE

4. Color in a map showing this; play a game testing students' understanding of this.	Observation
5. Study animal and plant life in connection with this skill.	Observation

GRADE FOUR

SUMMARY PROJECT

Look at an early map of Wisconsin (when most of the land was forested and Indians lived in Wisconsin), a map just before the Civil War, a map of today (teacher may have to draw up maps based on knowledge of Wisconsin history). Students will study these maps as a way of reviewing skills and in terms of understanding Wisconsin history.

PROBLEM: From comparing each map, what conclusions can you draw about:

1. Changes that have occurred in Wisconsin, particularly with respect to land use and population growth.
2. The kinds of people who have settled in Wisconsin, and why different groups settled in different areas.
3. Major problems that have faced people in Wisconsin over the years.
4. Who has owned most of the land in Wisconsin at the time each map shows.
5. Natural resources of Wisconsin and how they've been used, conserved.
6. Where you'd most like to live and why; also in what period of time.
7. Why cities grew up where they did.

If the maps you have do not show all this information, have students look it up in books or by talking with people, and then draw a map with symbols showing more information (Example: if the maps don't show patterns of immigration, have students learn patterns and then with colors represent these patterns on the map).

ANSWER: What might have happened (in terms of settlement, wealth, land use) if Wisconsin hadn't been logged so heavily?

What might a map of Wisconsin look like forty or fifty years from now?

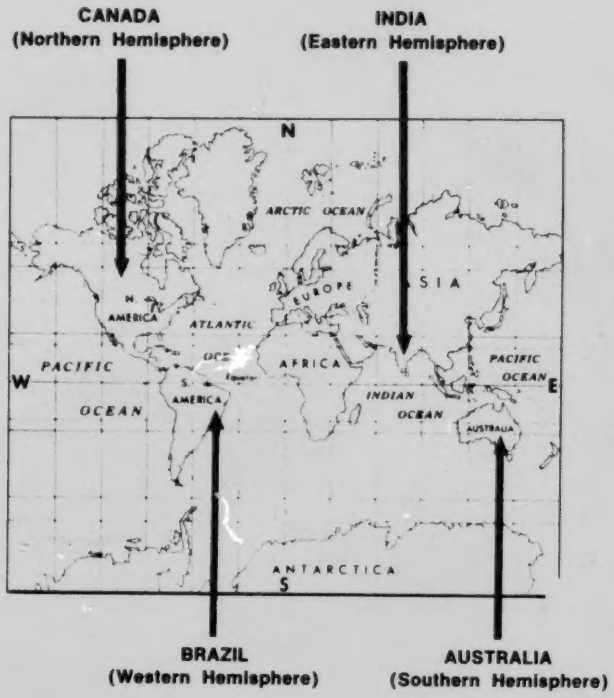
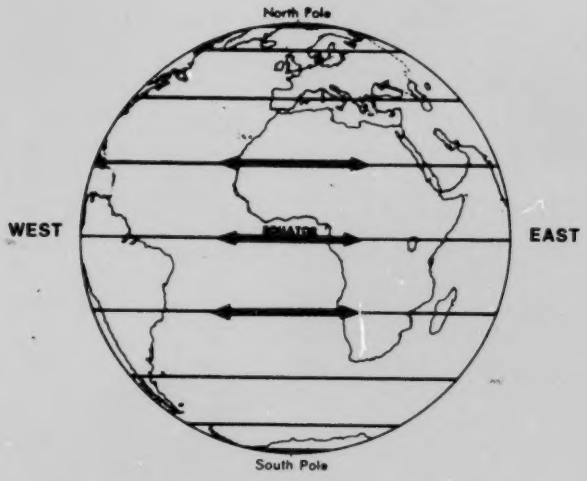
MAP AND GLOBE SKILLS CHART: GRADE FIVE

MAJOR SKILL AREA	EXPLANATION	Grade Five	
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Indicates on a world map a country located in each of the four hemispheres. 2. Shows on a map that lines of latitude run east and west. 3. Shows on a map that lines of longtitude run north and south. 4. Selects two cities on a map and correctly indicates which cardinal or inbetween direction must be followed to get from one city to another.	5. Select places want to visit and locate region of country, state and city they are in. 6. Knowing where N,S,E,W are outside of school bldg., be able to figure out where bldg. or streets are relative to where you are (i.e. if I'm walking south away from school, grocery store is N,S,E,W from me, etc.)
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Estimates distance between places by using the scale of miles on a map. 2. Recognizes that different maps have different scales. 3. Knows that one degree of latitude equals about 70 miles. 4. Explains that lines of latitude are parallel and are sometimes called parallels.	5. Explains that lines of longitude are also called meridians. 6. Realizes that all flat maps distort part of earth they show the larger the surf surface area, the greater the distortion.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Locates and identifies on a globe or world map lines of latitude (parallel) 2. Locates places in the low, middle and high latitudes. 3. Explains that a degree of latitude can be divided into sixty minutes. 4. Locates and identifies on a globe or world map lines of longitude (meridian) 5. Locates and identifies Great Circles on a globe or world map.	6. Identifies time zones of the United States and relates them to longitude. 7. Defines and locates on a map bays, gulfs, and deltas. 8. Locates the continents of Africa and Australia on a world map or globe. 9. Locates and distinguishes between natural-cultural features presented on a map. (e.g. mountains, rivers, cities, highways, etc.)
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Uses a map legend to identify map title, scale of miles, and symbol meaning. 2. Correctly interprets a land use map, a rainfall map, and a natural vegetation map.	3. Develops the habit of interpreting the map legend before trying to read the map.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	1. Determines from an elevation map the direction in which rivers flow. 2. Interprets a map legend and describes a specific area shown on the map. 3. Compares maps published on different dates and notes differences in population, industries, etc. 4. Translates information derived from maps and globes into bar graphs. 5. Infers from a visual or verbal description of a specific area, where that area might be located on a world map or globe.	6. Explains that the Tropic of Cancer and the Tropic of Capricorn are boundaries for the northern and southern most positions of the sun's vertical rays on the earth. 7. Identifies the approximate elevation of specific cities located on a relief map. 8. Uses the title and general content of a map to determine its purpose. 9. Explains how specific occupations utilize maps. 10. Understands that flat map projections distort the earth's features.

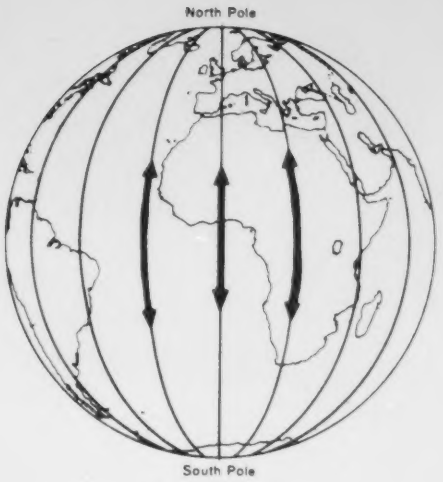
GRADE FIVE

MAJOR SKILL AREA: Direction

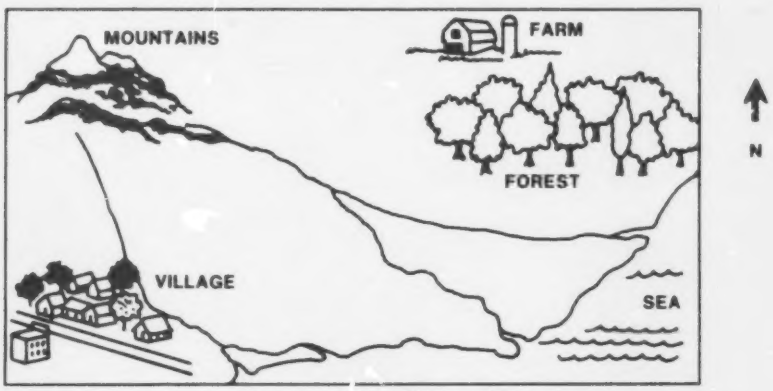
EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

SKILL	EXAMPLE (S)
1. Indicates on a world map a country located in each of the four hemispheres.	
2. Shows on a map that lines of latitude run East and West.	

ACTIVITY	PROCESSES
1. Read descriptions of a country in each hemisphere; ask students to figure out which hemisphere each country is in; locate it on a map.	Observation Inferring
2. Discuss concept of latitude and longitude and ask students why such lines might be useful in figuring out direction of location. Ask when this knowledge might come in handy.	Predicting

3. Shows on a map that lines of longitude run North and South.	
4. Selects two cities on a map and correctly indicates which cardinal or inbetween direction must be followed to get from one city to another.	 New York is East of Kansas City. Kansas City is Northwest of Atlanta. The student should be able to use both cardinal and inbetween directions accurately.
5. Select places students want to visit and locate region of the country, then state, then city in which located.	
6. Knowing where N, S, E, W are outside school buildings, be able to figure out where buildings and streets are relative to where students are.	

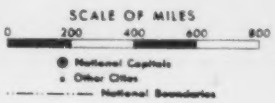
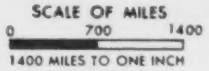
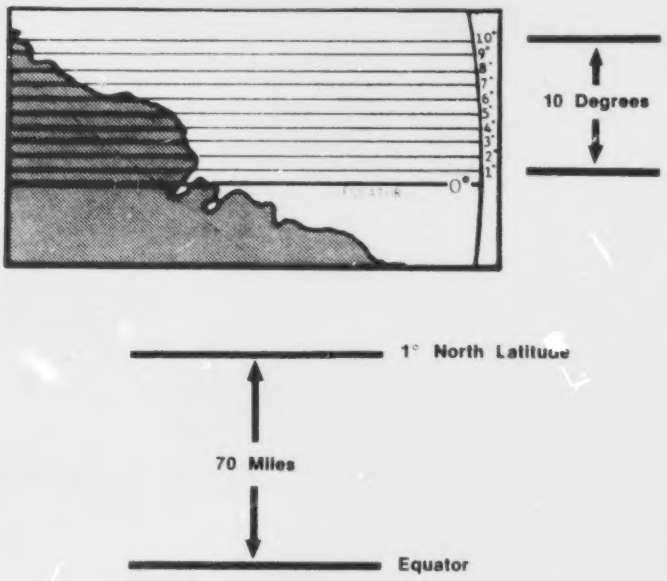
3. Discuss concept of latitude and longitude and ask students why such lines might be useful in figuring out direction of location. Ask when this knowledge might come in handy.	Predicting
4. Play a game which helps students to do this quickly without much thought. Have students describe the route of a trip they would like to take throughout the United States.	Observation
6. Use a picture map (see example below) with lots of objects in it (layout of a farm for example); as walking through the picture ask students to identify which objects are on their east, to the north, etc. Then go outside and do the same for the student's immediate surroundings. Make up a game with directions using map or immediate areas or pictures as a game board.	Observation



GRADE FIVE

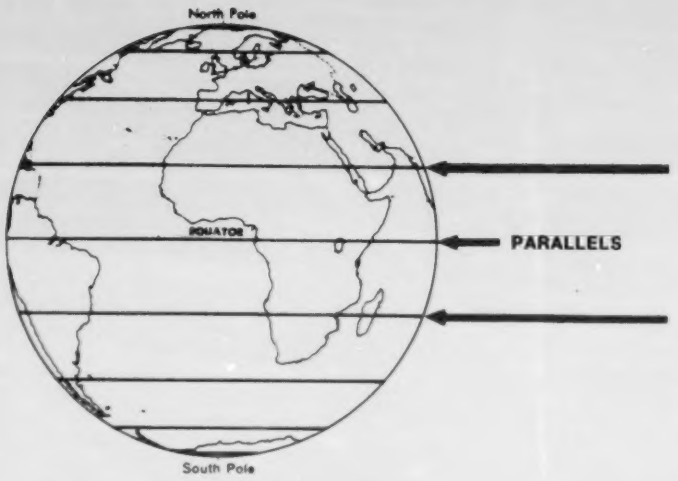
MAJOR SKILL AREA: Scale

EXPLANATION: Ability to recognize the scale of a map and to compute distances.

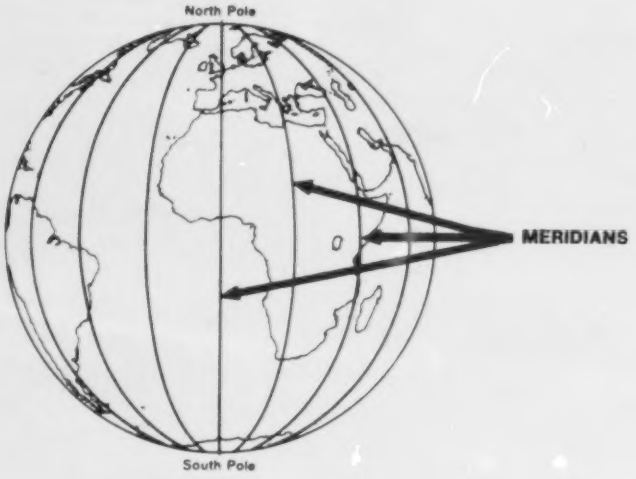
SKILL	EXAMPLE (S)
1. Estimates distances between places by using the scale of miles on a map. Estimate time via foot, bicycle and automobile.	 The distance between Denver and Chicago is approximately 1000 miles.
2. Recognizes that different maps have different scales.	 
3. Knows that one degree of latitude equals about 70 miles.	 10 Degrees x 70 Miles = 700 Miles

ACTIVITY	PROCESSES
1. Use highway maps to estimate distances. Make a chart showing distances from one place to another by different means of transportation.	Observation Measuring Communicating

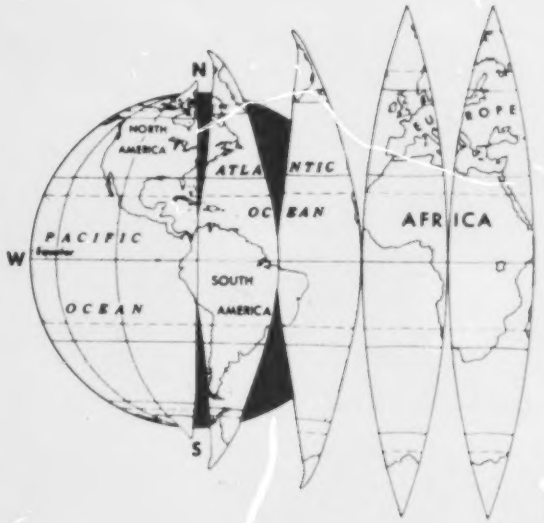
4. Explains that lines of latitude are parallel and are sometimes called parallels.



5. Explains that lines of longitude are also called meridians.



6. Realizes that all flat maps distort the part of the earth they show and the larger the surface area they try to show, the greater the distortion.

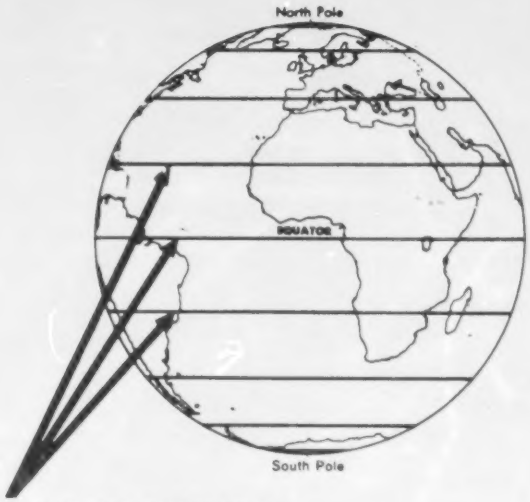
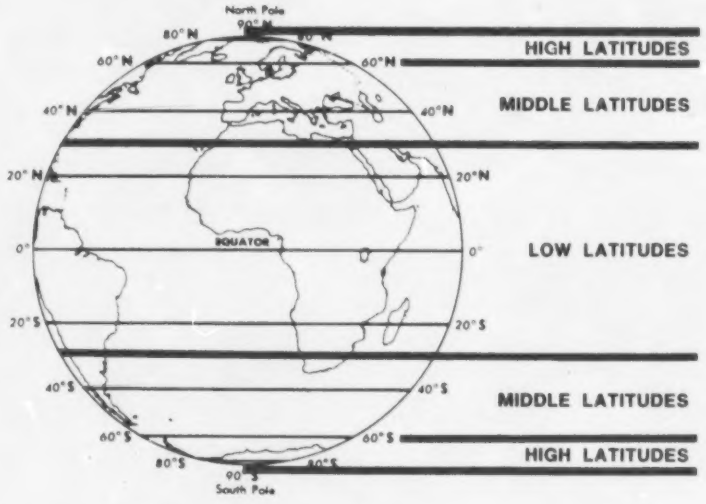
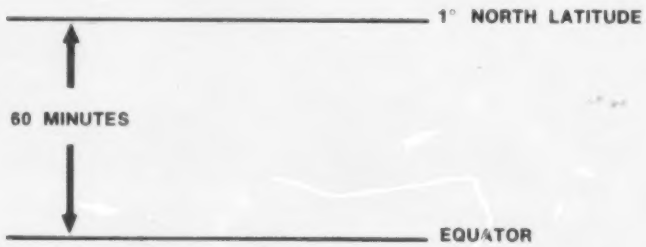


5. Explain the origin of the word "meridian".	Formulating definitions

GRADE FIVE

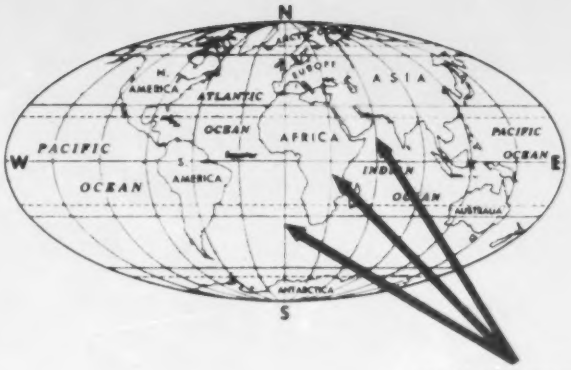
MAJOR SKILL AREA: Location

EXPLANATION: Ability to locate major features, both cultural and natural, in the world. Use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLE (S)
1. Locates and identifies on a globe or world map lines of latitude (parallels).	 LINES OF LATITUDE (PARALLELS)
2. Locates places in the low, middle, and high latitudes.	
3. Explains that a degree of latitude can be divided into sixty minutes.	

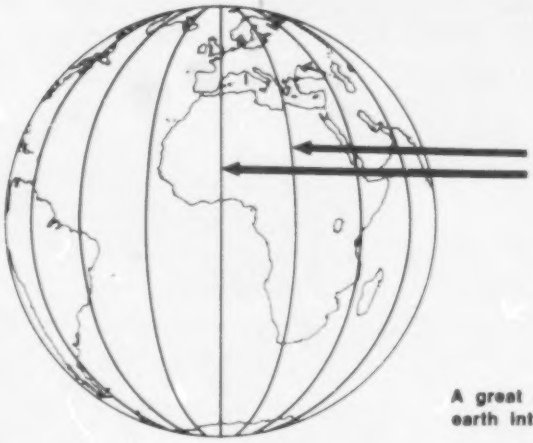
ACTIVITY	PROCESSES
1 & 2 Draw maps or fill in dittoed maps with parallels, meridians, great circles, gulfs, bays, deltas. Learn a little about differences in ecology between bays, gulfs, deltas. Locate Africa and Australia.	Observation

4. Locates and identifies on a globe or world map lines of longitude (meridians).



LINES OF LONGITUDE (Meridians)

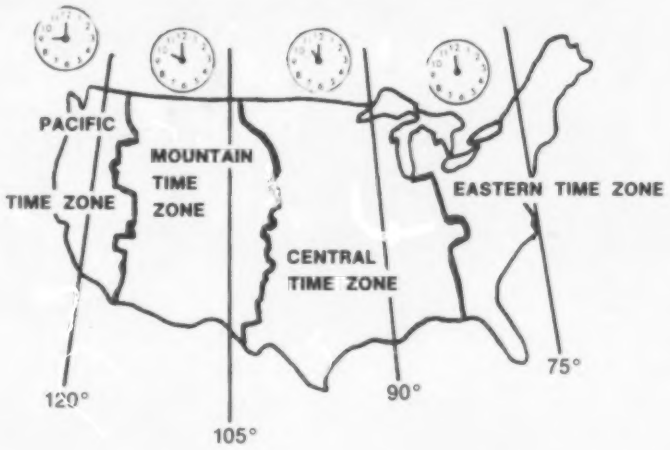
5. Locates and identifies Great Circles on a globe or world map.



GREAT CIRCLES

A great circle divides the earth into hemispheres.

6. Identifies time zones of the United States and relates them to longitude.



4 & 5 Draw maps or fill in dittoed maps with parallels, meridians, great circles, gulfs, bays, deltas. Learn a little about differences in ecology between bays, gulfs, deltas. Locate Africa and Australia.	Observation
6. Explain the origin of time zones after asking students to figure out reasons for time zones. Identify the time zones by coloring in a map of the United States. Play a game requiring students to coordinate a railroad or bus schedule with time zones as well as telephone calls.	Observation Inferring Predicting

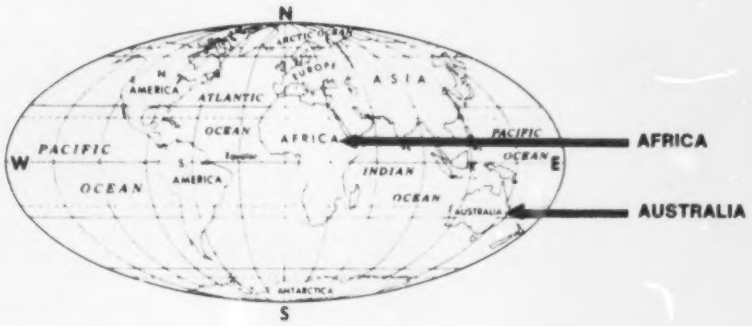
7. Defines and locates on a map bays, gulfs, and deltas.

Bay: Any small body of water set off from the main body of an ocean or lake.

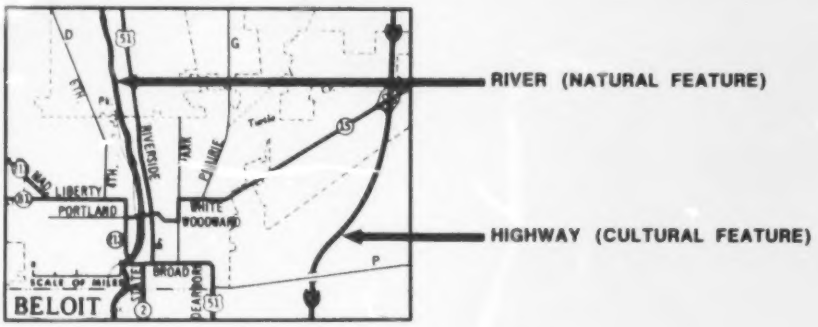
Gulf: An area of water larger than a bay and smaller than a sea.

Delta: Earth deposit at the mouth of a river.

8. Locates the continents of Africa and Australia on a world map or globe.



9. Locates and distinguishes between natural and cultural features presented on a map. (e.g. mountains, rivers, cities, highways, etc.).

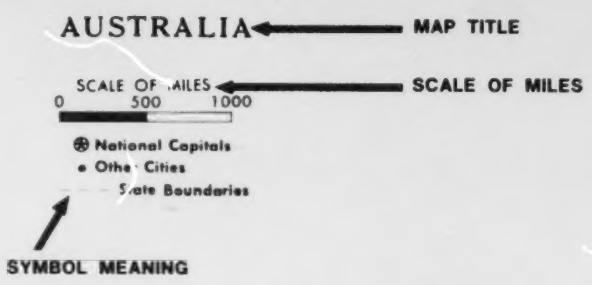
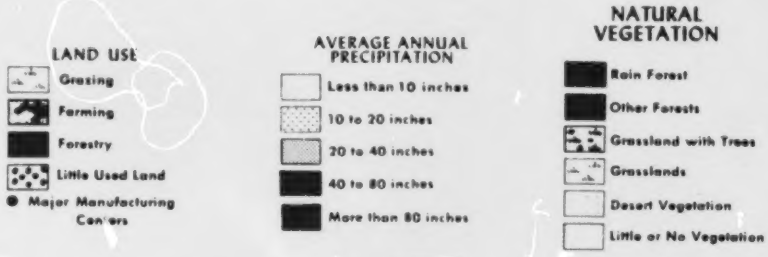
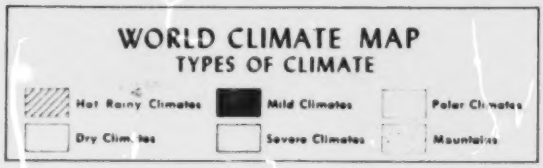


7. Draw maps or fill in dittoed maps with parallels, meridians, great circles, gulfs, bays, deltas. Learn a little about differences in ecology between bays, gulfs, deltas. Locate Africa and Austrailia.	Observation
8. Draw maps or fill in dittoed maps with parallels, meridians, great circles, gulfs, bays, deltas. Learn a little about differences in ecology between bays, gulfs, deltas. Locate Africa and Australia.	Observation
9. Define differences between and give examples of natural and cultural features. Identify natural and cultural features of your area. Compare these to another area of the country and relate to climate, elevation, etc.	Observation

GRADE FIVE

MAJOR SKILL AREA: Symbols

EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

SKILL	EXAMPLE (S)
1. Uses a map legend to identify map title, scale of miles, and symbol meaning.	
2. Correctly interprets a land use map, a rainfall map, and a natural vegetation map.	
3. Develops the habit of interpreting the map legend before trying to read the map.	 Accurate map reading is dependent upon correct interpretation of the map legend.

GRADE FIVE

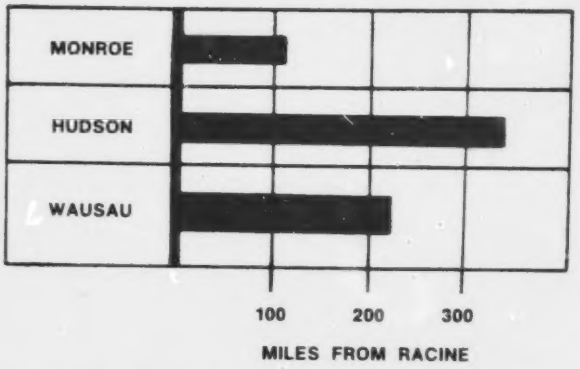
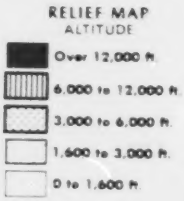
MAJOR SKILL AREA: Comparison and Inference

EXPLANATION: Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalization.

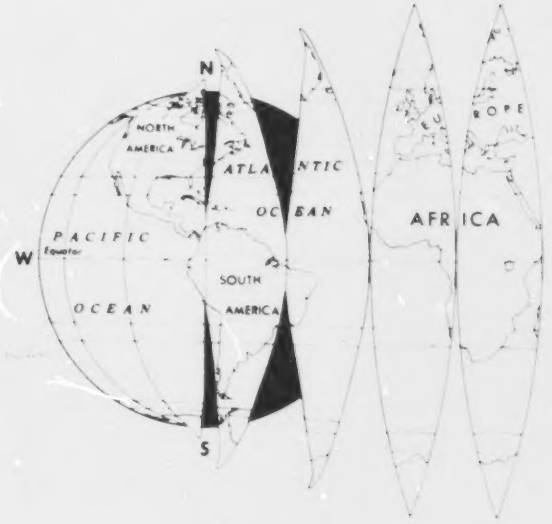
SKILL	EXAMPLE (S)
1. Determine from an elevation map the direction in which rivers flow.	The mouth of a river is always located at an elevation lower than its source.

ACTIVITY	PROCESSES
2. Put interpretation in the context of historical or current events. Use maps of local area and visit the place to see the vegetation and land use.	Observation

ACTIVITY	PROCESSES
1. Have students in groups choose an area of the world to study applying these skills to the study.	Observation Inferring Predicting

2. Interprets a map legend and describes a specific area shown on the map.	The description given by a student should indicate correct interpretation of the map legend.
3. Compares maps published on different dates and notes differences in population, industries, etc.	Encyclopedias, atlases, and texts contain historical maps which could be used to make such comparisons.
4. Translates information derived from maps and globes into bar graphs.	
5. Infers from a visual or verbal description of a specific area, where that area might be located on a world map or globe.	Landscape pictures may be cut out of magazines and presented to the student for speculation as their geographic location. After the students have completed their guessing as well as given reasons for their guesses, the identity of the location could then be revealed.
6. Explains that the Tropic of Cancer and The Tropic of Capricorn are boundaries for the northern and southern most positions of the sun's vertical rays on the earth.	The Tropic of Cancer is that parallel on a globe or map which marks the latitude farthest north receiving the vertical rays of the sun. The sun is directly over the Tropic of Cancer about June 22. The Tropic of Capricorn is that parallel on a globe or map which marks the latitude farthest south receiving the vertical rays of the sun. The sun is directly over the Tropic of Capricorn about December 22.
7. Identifies the approximate elevation of specific cities located on a relief map.	 The student should be able to identify the elevation of specific cities by accurately interpreting the colors or shadings shown on the map legend.

2, 3, & 4	Have students in groups choose an area of the world to study applying these skills to the study.	Observation Inferring Predicting
5, 6, & 7	Have students in groups choose an area of the world to study applying these skills to the study.	Observation Inferring Predicting

8. Uses the title and general content of a map to determine its purpose.	The student should realize that there are many kinds of maps for many uses, and should learn to choose the best map for the purpose at hand.
9. Explains how specific occupations utilize maps.	The student should be able to explain how an occupation or occupations use maps in their day to day work.
10. Understands that flat map projections distort the earth's features.	

8 & 9	Connect these two and show students examples of maps from different occupations asking them what purpose the map has. In groups, students draw simple maps for various occupations they are interested in (could be connected with #1-8 above—maps of occupations in study area).	Observation Inferring

GRADE FIVE

SUMMARY PROJECT

Problem: People have to live and work in the city, but they miss the quiet, greenery, and recreation of the country. Make up a simple map of a city of your own design to take these needs into account. Use symbols to show where buildings, parks, etc. are located.

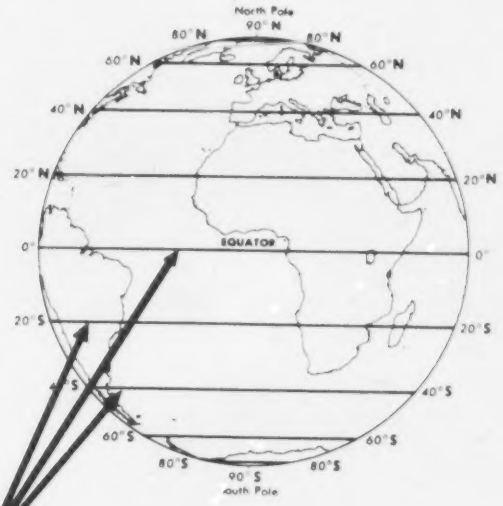
MAP AND GLOBE SKILLS CHART: GRADE SIX

MAJOR SKILL AREA	EXPLANATION	Grade Six	
DIRECTION	Ability to orient maps and globes. Use of cardinal and inbetween directions.	1. Realizes that north is not always at the top of a map by correctly indicating north as the center of a North Polar projection map. 2. Explains that lines of latitude run east and west but measure distance north and south. 3. Explains that lines of longitude run north and south but measure distance east and west.	4. Knows that lines of longitude are also called Great Circles. 5. Indicates on a world map a city located in each of the four hemispheres. 6. Learns that a compass is used for showing and determining direction. 7. Use compass to determine direction of another point visible to student.
SCALE	Ability to recognize the scale of a map and to compute distances.	1. Develops the habit of checking scale on all physical maps used. 2. Identifies directions and determines distances using scale-miles in order to trace routes on a globe or map. 3. Estimates North-South distances on a globe or map using latitude.	4. Realizes that lines of longitude are equidistance at the equator and that this distance diminishes as one moves toward the poles. 5. Realizes that large scale maps show more detail than small scale maps.
LOCATION	Ability to locate major features, both cultural and natural, in the world. Use of latitude, longtitude, and/or grid systems to identify specific locations.	1. Locates time zones of the western hemisphere and relates them to longitude. 2. Locates places on a globe or world map when given their latitude and longitude. 3. Gives the appropriate latitude and longitude of specific locations on a map or globe. 4. Locates and identifies the continents of the world on a globe or world map.	5. Understands the reason for the International Date Line and accurately computes time problems of international travel. 6. Uses the number and letter key for locating places on a state highway map.
SYMBOLS	Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.	1. Correlates, on a physical map, color with elevation. 2. Correctly interprets the colors, lines, shadings, and symbols, on maps he is expected to use.	3. Recognizes the difference between political, physical, and special purpose maps.
COMPARISON AND INFERENCE	Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.	1. Identifies the same location on different map projections. 2. Translates information derived from maps and globes into bar or circle graphs. 3. Interprets elevation from the flow of rivers. 4. Determines seasons by location of the sun's vertical rays on the earth. 5. Identifies various map projections and recognizes their visual distortions. 6. Relates temperature and climate to the way people live. 7. Determines a country's trade after study of maps (e.g. showing transportation routes, manufacturing areas, forests, grazing areas, etc.).	8. Explains why cities located at the same latitude, but different longitude have such a variety of climates. 9. Uses maps and globes to locate the geographic setting of historical and current events. 10. Identifies possible ways of earning a living in a particular geographic location after a study of appropriate maps. 11. Identifies occupations that require the use of maps.

GRADE SIX

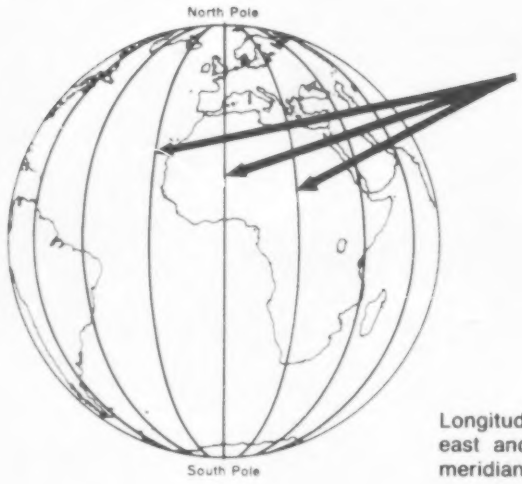
MAJOR SKILL AREA: Direction

EXPLANATION: Ability to orient maps and globes. Use of cardinal and inbetween directions.

SKILL	EXAMPLE (S)
1. Realizes that north is not always at the top of a map by correctly indicating north as the center of a North Polar projection map.	 **NORTH**
2. Explains that lines of latitude run east and west but measure distance north and south.	 **LINES OF LATITUDE** Latitude measures distance north and south of the equator.

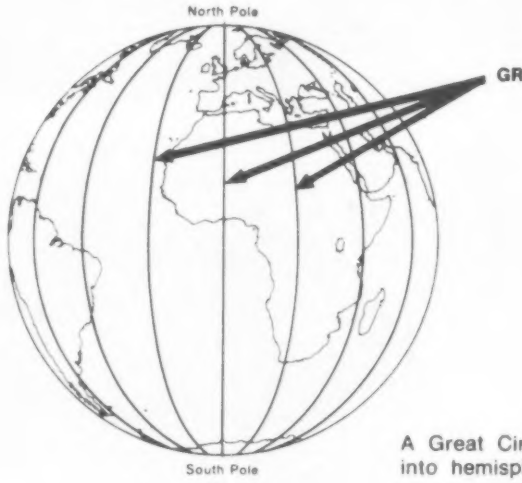
	ACTIVITY	PROCESSES
1 & 2	Point out on a map to students; use flash cards or ask questions to test students' understanding. Discuss purpose of measurement, asking students why it's helpful to measure distances N, S, E, W by means of latitude and longitude. Locate specific places on the map by referring to lines of latitude and longitude.	Observation

3. Explains that lines of longitude run north and south but measure distance east and west.



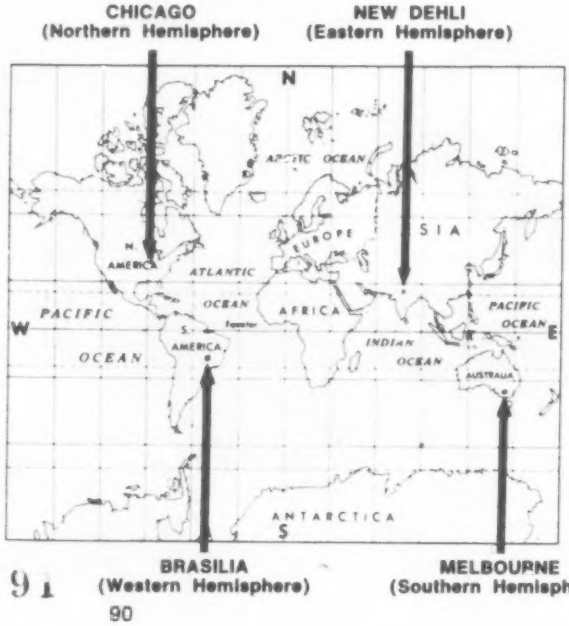
Longitude measures distance east and west of the prime meridian.

4. Knows that lines of longitude are also called Great Circles.



A Great Circle divides the earth into hemispheres.

5. Indicates on a world map a city located in each of the four hemispheres.



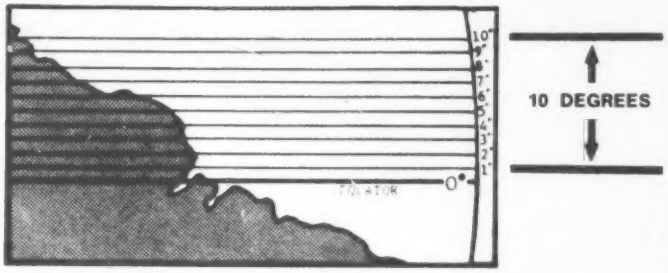
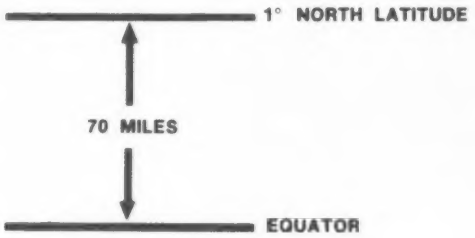
3 & 4	Point out on a map to students; use flash cards or ask questions to test students' understanding. Discuss purpose of measurement, asking students why it's helpful to measure distances N, S, E, W by means of latitude and longitude. Locate specific places on the map by referring to lines of latitude and longitude.	Observation
5.	Have each student locate a different city in each hemisphere. From only their general knowledge of the hemisphere and the city's location in that hemisphere, have students describe what it might be like as best they can. Look up more information and pictures about the city to find out how close they were to describing its geographical and physical features. In small groups share knowledge about the cities and answer: What conclusions can we draw about the characteristics of the hemisphere from our knowledge of the cities we have studied in the hemisphere? (What do all the cities have in common, such as land, climate, etc.?) What factors contribute to differences between each city, even though they are in the same hemisphere (altitude, for example)?	Observation Inferring Predicting Interpreting Data

6. Learn that a compass is used to show and determine direction.	
7. Use a compass to determine direction of another point visible to student from where student is.	

GRADE SIX

MAJOR SKILL AREA: Scale

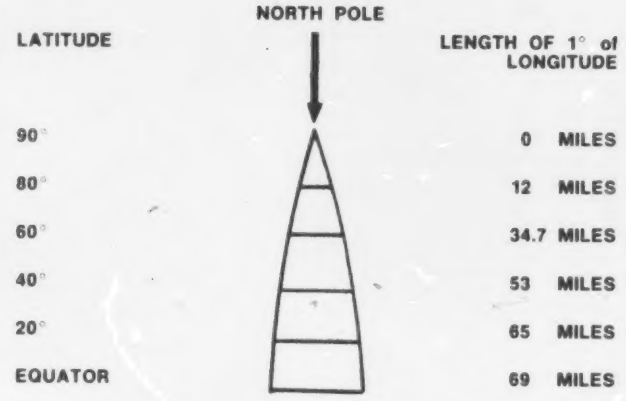
EXPLANATION: Ability to recognize the scale of a map and to compute distances.

SKILL	EXAMPLE (S)
1. Develops the habit of checking scale on all physical maps used.	
2. Identifies directions and determines distances in order to trace routes on a globe or map.	The student should be able to identify the direction or directions that must be followed to get from one city to another and determine the distance between those cities.
3. Estimates North - South distances on a globe or map using latitude.	  10 DEGREES x 70 MILES = 700 MILES

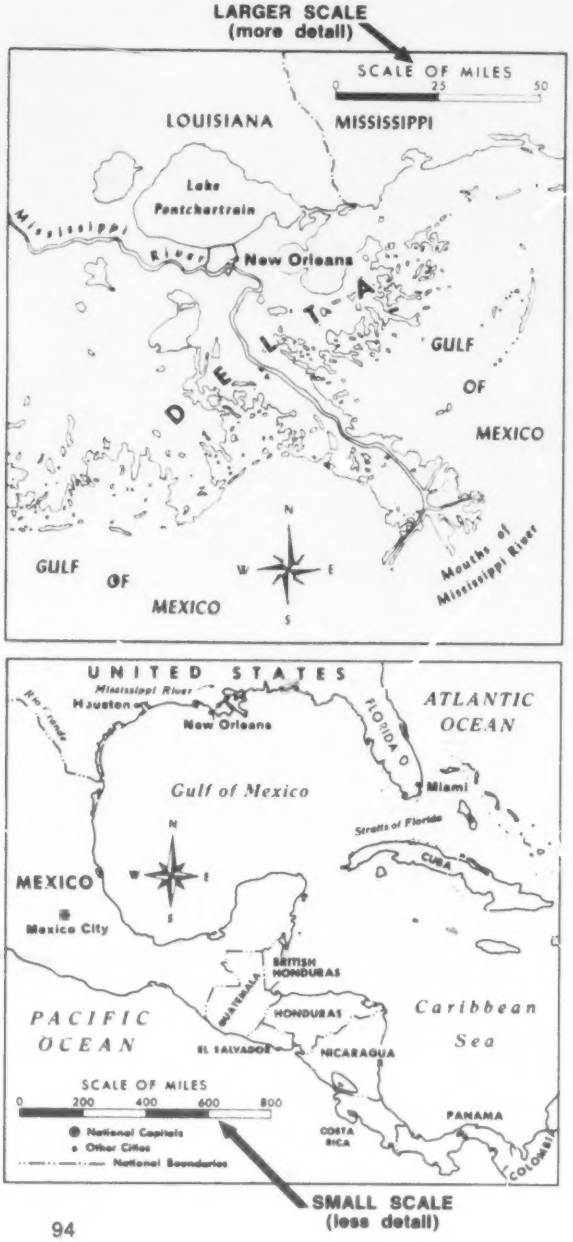
6. Bring at least one compass to class; talk about the origin of the compass. Ask students to figure out its possible uses.	Observation Inferring
7. Divide the class into groups and have them go on a scavenger hunt following compass directions.	Observation

ACTIVITY	PROCESSES
1. Distribute dittoed maps with exercises to help students learn these skills.	Observation
2. Trace Indian trade routes, routes of early explorers to various parts of the world, pre-Civil War underground railroad routes, routes of migrant workers following the harvests, routes of pilgrimages in Europe.	Observation
3. Distribute dittoed maps with exercises to help students learn these skills.	Observation

4. Realizes that lines of longitude are equidistant at the equator and that this distance diminishes as one moves toward the poles.



5. Realizes that large scale maps show more detail than small scale maps.

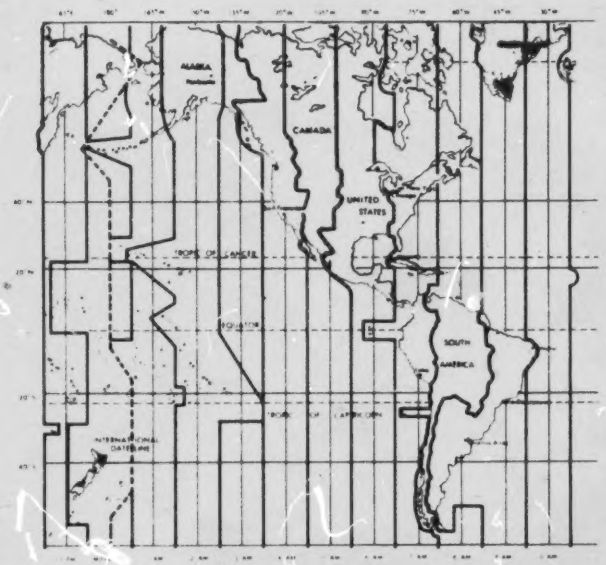
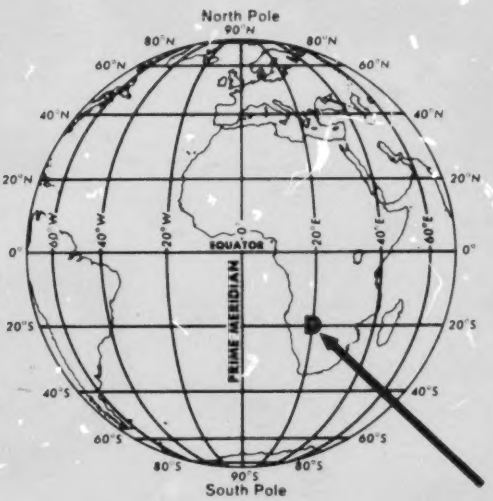


4. Distribute dittoed maps with exercises to help students learn these skills.	Observation
5. Students draw a large scale and a small scale map of the same area.	Observation

GRADE SIX

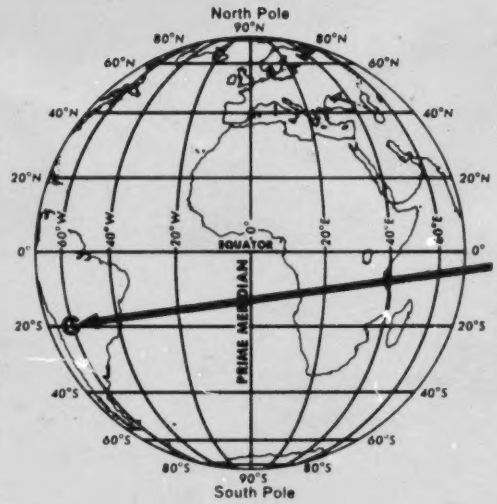
MAJOR SKILL AREA: Location

EXPLANATION: Ability to locate major features, both cultural and natural, in the world. Use of latitude, longitude, and/or grid systems to identify specific locations.

SKILL	EXAMPLE (S)
1. Locates time zones of the western hemisphere and relates them to longitude.	 A time zone consists of 15 degrees of longitude.
2. Locates places on a globe or world map when given their latitude and longitude.	 **D is located at 20° south latitude and 20° east longitude.**

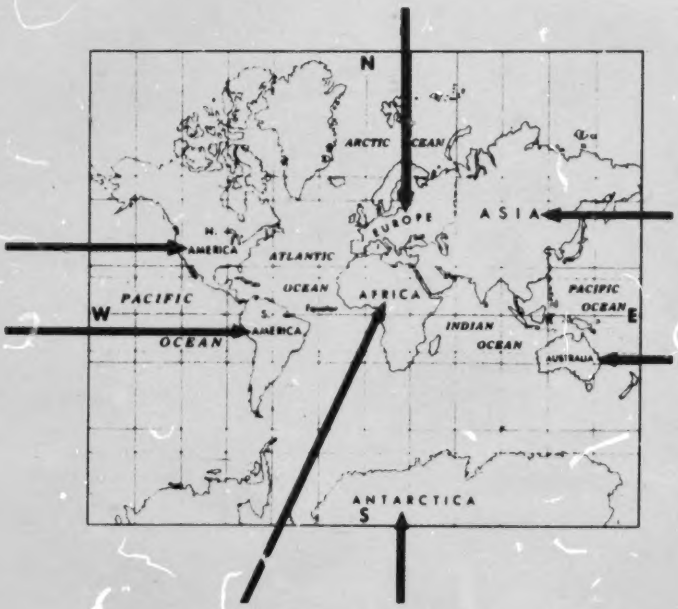
	ACTIVITY	PROCESSES
1 & 2	Choose places relevant to subject matter students are studying or what is in the news headlines and play games or fill out answer sheets to identify the time zone and location (latitude and longitude) of each place.	Observation

3. Gives the approximate latitude and longitude of specific locations on a map or globe.



The latitude and longitude of G is 20° south latitude and 60° west longitude.

4. Locates and identifies the continents of the world on a globe or world map.

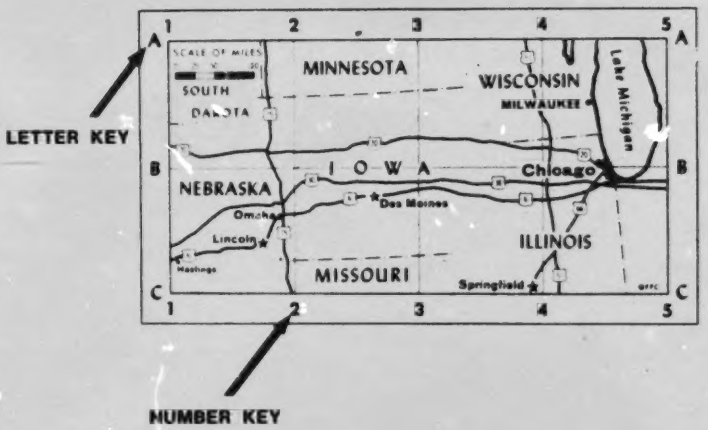


5. Understands the reason for the International Date Line and accurately computes time problems of international travel.

DATE LINE

When crossing the International Date Line (180th meridian), today becomes tomorrow if you are traveling west. If you cross the International Date Line traveling eastward, today becomes yesterday.

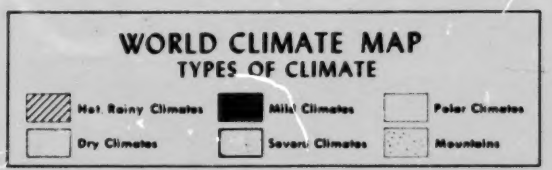
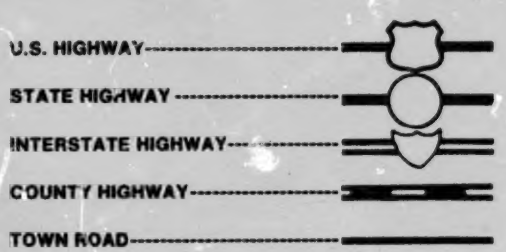
3. Choose places relevant to subject matter students are studying or what is in the news headlines and play games or fill out answer sheets to identify the time zone and location (latitude and longitude) of each place.	Observation
4. Orient students to continents by discussing the theory of continents splitting off from one big one. Read a story and/or description of each continent and have students try to place each in the proper hemisphere, giving reasons for their placements. Compare answers with continent's actual location and explore further their geographical and cultural features.	Observation Inferring
5. Set up a situation in which students have to figure out why the world developed the International Date Line (for example, ask what problems might arise if the countries did not coordinate time).	Inferring

6. Uses the number and letter key for locating places on a state highway map.	

GRADE SIX

MAJOR SKILL AREA: Symbols

EXPLANATION: Ability to correctly interpret dots, lines, lettering, and color on maps, globes, and legends.

SKILL	EXAMPLE (S)
1. Correlates, on a physical map, color with elevation.	Most physical maps use the International Color Code.
2. Correctly interprets the colors, lines, shadings, and symbols, on maps he is expected to use.	  The student should be able to demonstrate his ability to interpret map symbols correctly.

6. Ask students to look up places on a highway map that are connected to specific problems or interests and identify the name of the town and the number and letter at which it is located (for example, ask students to list six towns on the Wisconsin River).	Observation

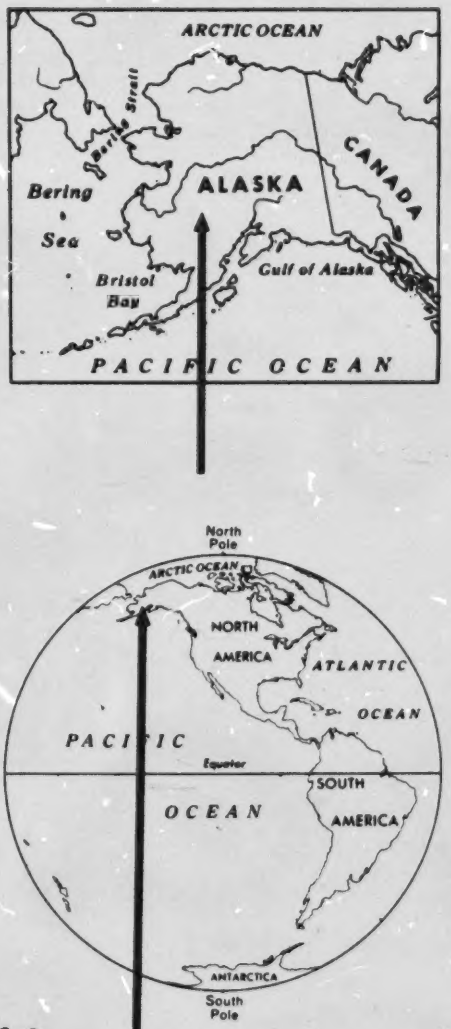
ACTIVITY	PROCESSES
1. Have students fill in a map and color code it to elevation.	Observation
2. Coordinate this with social studies and science projects.	Observation

3. Recognizes the difference between political, physical, and special purpose maps.	**Political Map:** A map that shows the political boundaries and divisions of countries, states, and cities, etc. **Physical Map:** A map that shows the physical features and natural regions of a particular area. **Special Purpose Map:** A map that has been designed to present a particular type of information (i.e. temperature map, rainfall map, product map.)

GRADE SIX

MAJOR SKILL AREA: Comparison and Inference

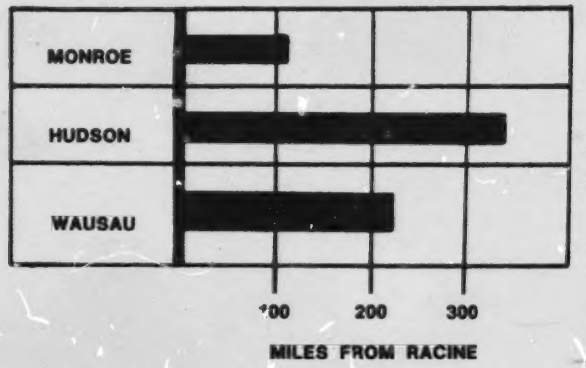
EXPLANATION: Ability to use information to make an intelligent hypothesis which cannot be proved from information on the map itself. Comparison of two or more maps to see relationships, draw conclusions, and form generalizations.

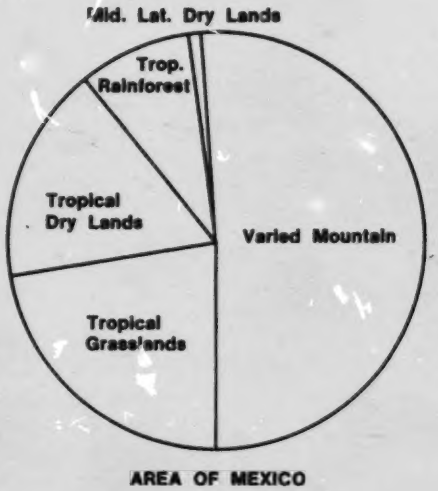
SKILL	EXAMPLE (S)
1. Identifies the same location on different map projections.	

3. Introduce the concept of a political map. Why is it helpful and to whom? Have students make a simple political map on neighborhood or town voting patterns, for example, or on income levels in the town, location of big business and small business, or distinct ethnic and/or racial groups in the town. Discuss to what people or groups the map might be helpful, what the map suggests about the nature of the town, what people can learn from it. Small groups of students could work together on this gathering information. Some groups could make political maps, and others make other special purpose maps. Its subject matter could be determined by questions students formulate about the town.	Observation Predicting Interpreting Data

ACTIVITY	PROCESSES
1. Connect with location of continents, locating each on two maps.	Observation

2. Translates information derived from maps and globes into bar or circle graphs.



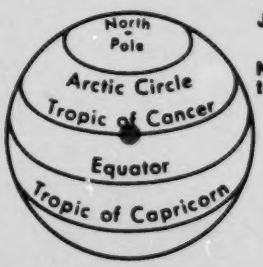


3. Interprets elevation from the flow of rivers.

The mouth of a river is always located at an elevation lower than its source.

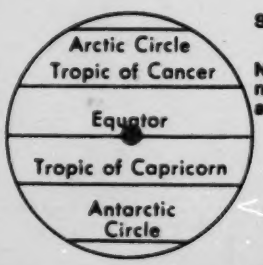
4. Determines seasons by location of the sun's vertical rays on the earth.

● ➡ Represents the spot where the vertical rays of the sun strike the earth.



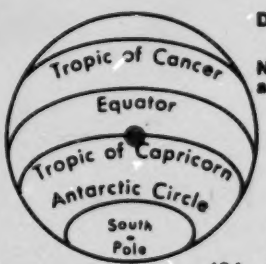
June 22

North Pole canted toward the sun.



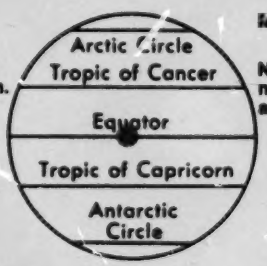
September 22

North Pole canted neither toward nor away from the sun.



December 22

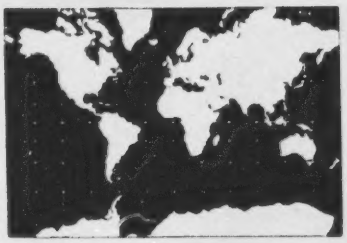
North Pole canted away from the sun.



March 21

North Pole canted neither toward nor away from the sun.

3 & 4	Teacher helps students learn these using overhead projector and questions and answers.	Observation Inferring

5. Identifies various map projections and recognizes their visual distortions.	 **Mercator Projection** Distortion: Areas are greatly enlarged near the North and South poles. **Mollweide Projection** Distortion: North-South distortion in the equatorial regions. **Polar Projection** Distortion: Distorts distances and areas in hemispheres.
6. Relates temperature and climate to the way people live.	After a study of appropriate maps, the student should be able to give a written or verbal description of how temperature and climate affect the way people live in a specific area.
7. Determines a country's trade after study of maps (e.g.showing transportation routes, manufacturing area, forest, grazing areas, etc.)	A country surrounded by water would be dependent, to some extent, upon fishing.
8. Explains why cities located at the same latitude, but different longitude have such a variety of climates.	After a study of appropriate maps, the student should be able to explain how altitude, ocean currents, nearness to a large body of water, etc. affect the climate of the two cities of the same latitude he has selected.
9. Uses maps and globes to locate the geographic setting of historical and current events.	The student should be able to indicate on a world map the geographic location of current world events.

5. Teacher helps students learn these using overhead projector and questions and answers.	Observation Inferring
6. Describe to students the climate and temperature of specific areas and ask them how they would live and where the area might be located. Compare their description with the areas using stories and pictures. Discuss how temperature and climate may affect people's behavior (siestas in hot weather). Discuss changes people go through when they move from one climate to another, or from one altitude to another. Students could role play this situation.	Observation Inferring Predicting
7. Connect this with social studies and/or science projects.	Observation
8. Choose at least two cities and study factors affecting climate. Then be able to explain #8.	Inferring
9. In connection with this, try to determine what connection there is between the geography of the place and the historical and current event studied.	Inferring

10. Identifies possible ways of earning a living in a particular geographic location after a study of appropriate maps.	The student should be able to identify an occupation or occupations related to the latitudinal locations and geographic surroundings of the area under study.
11. Identifies occupations that require the use of maps.	The student should be able to identify occupations in which maps play a vital role (i.e. airline pilot, ship's captain, truck driver, police department, travel agent, etc.)

10. Choose maps of areas that are of particular interest to students and then study with #10 in mind.	Observation
11. Identify and try to explain how or why the maps are used.	Observation Inferring

GRADE SIX

SUMMARY PROJECT

Pretend that you could plan out a whole state to fit the needs of the people (they need food, recreation areas, no pollution if possible, a means of transportation to their work, schools, etc. Add any other needs you can think of). Draw a simple map. locating bodies of water, and then everything else (cities, agricultural land, etc.) in such a way as to meet people's needs. Use symbols on the map. Be able to explain generally why you designed the state as you did.

PART TWO

SKILLS ESSENTIAL FOR SOCIAL STUDIES RESEARCH AND CRITICAL THINKING

I. Parts of a Book

II. Dewey Classification System

III. Card Catalog

IV. Encyclopedias

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SKILLS ESSENTIAL FOR SOCIAL STUDIES RESEARCH

SKILL	GRADE LEVEL Kindergarten	Grade One	Grade Two	Grade Three
ABILITY TO LOCATE BOOKS	1. Knows the location of picture books in the school library.	1. Asks the school librarian for help in locating certain books.	1. Knows picture books are arranged, by author, in alphabetical order.	1. Knows fiction books are arranged, by author, in alphabetical order. 2. Locates fiction library books by author.
ABILITY TO USE BOOKS	1. Locates the title of a book on its cover.	1. Locates the author and title of a book on its cover.	1. Locates basic parts of a book: cover, spine, title page, and body.	1. Identifies on the title page the author, title, and publisher. 2. Locates and uses the table of contents under the guidance of a teacher or librarian. 3. Locates the copy-right date in various books.
ABILITY TO LOCATE REFERENCE MATERIAL	1. Knows the letters of the alphabet.	1. Recognizes and writes, by name, all letters of the alphabet.	1. Recognizes guide letters (or words) on the spine of encyclopedias 2. Becomes aware of titles of reference books.	1. Locates a dictionary for the purpose of determining the spelling and meaning of a word. 2. Becomes aware of sets of series of reference books.
ABILITY TO USE REFERENCE MATERIAL (DICTIONARY)			1. Alphabetizes words by the first letter.	1. Alphabetizes words by the first and second letters. 2. Uses guide words to quickly locate a specific entry word. 3. Realizes that guide words are the first and last entry on each dictionary page. 4. Uses a dictionary to determine the spelling and meaning of a word.
ABILITY TO REFERENCE MATERIAL (ENCYCLOPEDIA)			2. Recognizes guide letters (or words) on the spine of encyclopedias. 3. Alphabetizes words by the first letter.	5. Alphabetizes words by the first and second letters. 6. Realizes most encyclopedias are arranged alphabetically. 7. Uses guide words to quickly locate a specific entry word.
ABILITY TO USE REFERENCE MATERIAL (ATLAS)				8. Realizes that an atlas contains maps of cities, states, and countries.
ABILITY TO USE REFERENCE MATERIAL (ALMANAC)				

Grade Four	Grade Five	Grade Six
1. Locates fiction library books by author and title. 2. Distinguishes between a fiction and a nonfiction book. 3. Realizes non-fiction books have a call number.	1. Locates fiction books by author, title, and subject. 2. Knows the major Dewey Decimal classification groups. 3. Uses the card catalog to locate non-fiction books by subject. 4. Identifies the author and title of a non-fiction book from a subject card.	1. Uses the card catalog to find books, both fiction and non-fiction, by author, title and subject.
1. Locates and uses the glossary for word meanings. 2. Uses the table of contents to locate specific chapters within a non-fiction book.	1. Uses the index to locate specific information within the book.	1. Uses the index to locate information within the book. 2. Uses illustrations for greater understanding of the text. 3. Uses chapter headings and sub-headings to break down information presented in the book. 4. Uses table of contents to locate specific 5. Uses glossary for word meanings.
1. Identifies and distinguishes between an encyclopedia and a dictionary. 2. Locates a dictionary for the purpose of determing syllable division and pronunciation. 3. Locates an encyclopedia for the purpose of securing specific information on people, places, things or events. 4. Locates an atlas for the purpose of finding specific information on cities, states and countries.	1. Identifies and distinguishes between an almanac and atlas. 2. Locates an atlas for the specific purpose of finding information on climate, rainfall, population, mineral location, etc. 3. Locates an almanac for the purpose of securing general information and up-to-date facts related to social studies units. 4. Uses a dictionary for the purpose of determining the number of word meanings.	1. Locates and uses all major reference materials in the classroom or library: atlas, almanac, dictionary and encyclopedia. 2. Is proficient at determining the specific purposes for which a dictionary encyclopedia, atlas, or an almanac can be used.
1. Alphabetizes words by the first three letters. 2. Uses a dictionary to determine word pronunciation and syllable division. 3. Uses dictionary illustrations to clarify word meanings.	1. Uses a dictionary to determine the numbers of meanings a word has. 2. Uses dictionary context clues to help clarify word meaning. 3. Uses a dictionary pronunciation key to aid in word pronunciation.	1. Uses a dictionary to determine word synonyms, word antonyms, word homonyms, and word homographs. 2. Uses a dictionary to determine the grammatical uses of a word. 3. Applies all previously taught dictionary skills with competence.
4. Alphabetizes words by the first three letters. 5. Realizes that different encyclopedia sets are divided by letters, words, and/or an index. 6. Realizes that many long encyclopedia articles are divided by sub-topics in heavy, larger type. 7. Uses the encyclopedia index to locate specific information.	4. Uses an encyclopedia index, when provided, to locate a specific volume or volumes and page or pages pertaining to a certain subject. 5. Uses the "see" and "see also" keys to find additional information in other encyclopedia volumes pertaining to the same subject. 6. Uses encyclopedia summaries, fact finders, reviews, and pictorial aids for a greater understanding of the article subject matter.	4. Locates the "cross-reference" study aids located at the end of a main article to find additional information listed as related subjects. 5. Applies all previously taught encyclopedia skills with competence.
8. Uses the table of contents in an atlas to locate maps of certain countries or regions.	7. Uses the index to find the specific page or pages for a map showing the geographical location of a city, state, or country. 8. Interprets the map legend or key before trying to read the map. 9. Uses the world physical features index to determine the exact location of major lakes, mountains, etc. 10. Uses the special purpose maps (climate, rainfall, ocean current, population density, products) to obtain information concerning a specific region or country.	6. Uses letter and number coordinates to find the exact location of a city or county. 7. Uses the physical features index to determine the height of a mountain or depth of a lake or ocean. 8. Accurately interprets graphic and pictorial materials presented in the atlas. 9. Determines the population of a specific city or country by using the population index. 10. Uses the atlas with skill and competence.
	11. Understands that an almanac contains general information and up-to-date facts. 12. Locates desired information by first utilizing the index.	11. Realizes that some almanacs have a table of contents and/or indexes. 12. Locates publishing date in order to determine how current the almanac is. 13. Uses the almanac with skill and competence.

SUGGESTED STUDENT GUIDE FOR SOCIAL STUDIES REFERENCE WORK AND RESEARCH IN THE LIBRARY

I. Parts of a Book

In order to make the best use of a book, these are some terms which you should learn. Please study these words and definitions. They will be very helpful to you when you begin your research.

1. Binding: The binding of the book is the cover.

2. Fly Leaf: The fly leaf is a blank page found in the front and in the back of a book. It is usually made of heavy paper.

3. Title Page: This is a very important page in every book! It tells you the title, author, illustrator, publisher, and copyright date.

4. Editor: Some books say "Edited by - - - -." This means that this person has revised or changed the original words of the author. This is often done to modernize a technical book.

5. Anonymous: This word is occasionally found in place of an author's name. It means that we do not know who the author is.

6. Pseudonym: Some writers to not use their own names. A pseudonym is an assumed name.

7. Series: A series is a group of books that are alike in some way. There are two kinds of series:

   a. Author series
      All the books are written by the same person.

   b. Publisher series
      All the books are published by the same company. They have different authors but similar subjects.

8. Copyright: The copyright protects the author. It means that nobody can copy any part of the book and resell it as their own. Copyrights are granted by Congress and are good for twenty-eight years. They can be renewed for another twenty-eight years.

9. Table of Contents: This is a list of chapter headings found in the front of the book. The chapters are listed in the order in which they are found in the book.

10. Index: This is a list of topics found in the back of a book. It is arranged in alphabetical order. Fiction and biographies usually do not have an index.

11. Preface, Introduction: This is found in the front of the book and is written by the author. It gives you a preview of what you will find in the book.

12. Foreword: This is also found in the front of the book. It is written by someone other than the author and usually tells you something about the author.

13. Appendix: An appendix usually contains tables or factual materials that support what the author says in the body of the book. For instance, documents such as the Constitution of the United States appear in the appendix of many history books.

14. Bibliography: A bibliography is a list of other books related to the subject of the book. Such a list is especially helpful if you want to do more reading on the same subject.

Sometimes the author tells very briefly what is in each book in the list or gives his opinion of each book.

15. Glossary: A glossary defines the meaning of special words used in the book. It is not the same as a dictionary, however. A dictionary attempts to give the various meanings that a word may have. A glossary gives just the meaning that it has in the book. Quite often, particularly in school books, the glossary includes pronunciation.

16. Index: A good index lists all the things, events, and people of any importance mentioned in the book, and tells the pages on which they are mentioned. Since all indexes are in alphabetical order, the quickest way to locate information on special topics is to consult the index. Most indexes in books use the same system that the library does in regard to alphabetizing abbreviations, numbers, names beginning with Mc, and book titles beginning with A, An, or The.

II. Dewey Classification System

A. Description

A *system* is a regular way of doing things while a *classification* is an orderly way of arranging things. Melvil Dewey developed a way of arranging books so that they could be quickly and easily found. His arrangement is used in most schools and public libraries. It is also used in many foreign countries. In this system, Dewey has divided all books into ten groups. Each number in Dewey's system has a meaning and stands for a subject. These numbers are called *Class Numbers*. They are written on the backs of books, and then the books are arranged according to class number beginning at the left with the lowest class number and ending at the right with the highest. In Dewey's system all books of the same subject are grouped together. As an example, all the science books are in the 500 group.

B. Dewey's Ten Main Groups

000-099 General works (encyclopedias, handbooks, etc.)
100-199 Philosophy (psychology, vocational guidance)
200-299 Religion (Bible, mythologies)
300-399 Social science (holidays, fairy tales)
400-499 Languages (dictionaries)
500-599 Science
600-699 Useful arts (handicrafts, pets)
700-799 Fine arts (amusements, sports)
800-899 Literature (poems, plays)
900-999 History of races and countries

To these ten groups we add the following books:
Fiction
Easy reading - up to third grade
Picture books
Reference

C. Biography

In most libraries you will find several shelves of books which have been labeled biography. A biography is the history of a person's life. These books are usually kept together. They are found in the 920's. Unlike make-believe story books, these books are arranged on the shelves alphabetically according to the last name of the person about whom the book is written.

D. Dewey's Social Science and History Classifications - numbers with which you will be most concerned.

300 The social sciences
320 Political science
330 Economics
340 Law
370 Education
380 Commerce
390 Customs and Folklore
900-909 World History
910-919 Travel, Geography, Maps, Greek and Roman Cultures
920-929 Biographies
930-939 Ancient History
940-949 History of Modern Europe
950-959 History of Modern Asia
960-969 History of Modern Africa
970-979 History of North America
980-989 History of South America
990-999 History of Other Parts of the World

As you examine a library book that has a class number, you will find another number below it. This is a *call number.* The call numbers are made up of a combination of letters and numbers which stand for the author and title of the book.

III. Card Catalog

The card catalog is the index to the library. It tells you what books are in the library and where to find them. The catalog has many drawers, each of which has index letters on the front. These help you to locate your book more quickly. A drawer having the index letters "Bre - C" would contain everything from "bread" to "czar." When you open the drawer, you will see another guide for you to use. Certain cards stick out above the others. They are called guide cards and are arranged alphabetically. You use them just as you use guide words in the dictionary. There are four kinds of cards found in the catalog. You should know how to use each one.

1. *Author Cards* - With these cards, you can locate all the books written by a particular author. Look up the author's name; his books will be listed alphabetically. The call number will tell you where to find each of his books. If you wanted a book by Sir Walter Scott, the author card would look like this:

941 Sco	Scott, Sir Walter Tales of a grandfather	Ginn, 1900

2. *Title cards* - With these cards, you can locate all the books according to their titles. If you want to find *The Jungle Book,* look in the "J" drawer and you will find:

Jungle Book
Kipling, Rudyard

3. *Subject cards* - With these cards, you can find all the material in the library about any specific subject. If you were studying electricity, you could look on the "E" drawer and find a card such as this:

537 Ada	ELECTRICITY Adams, J.H. Harper's electricity book for boys Harper, 1907

Other cards concerning electricity would follow this one.

4. *Cross reference cards* - Some subjects have several names and may be listed in several ways in the library. These cards will refer you to another section of the catalog where you will find more information on your subject. They may do this in several ways:

Farming
see Agriculture

Birds
to be found under
Nests

IV. Encyclopedias

The encyclopedia contains a wealth of information about every subject imaginable. It is different from a dictionary. A dictionary tells you the spelling of a word, its meaning, and its pronunciation. The encyclopedia tells you what the word stands for. It tells you about the subject. A good encyclopedia should be easy to use, well illustrated, and up-to-date.

1. Arrangement

   Most encyclopedias are arranged alphabetically. All articles beginning with the same letter are found in the same volume. Within the volumes, articles are arranged alphabetically letter by letter. Thus "Newark" would come before "Newspaper" and "Newspaper" would come before "New York."

2. Guide words

   Guide words are found at the top of each page just as they are in the dictionary. The title of the first article on the page is found at the top of the first column. The title of the last article on the page is found at the top of the second column. By glancing at these, you can find your subject without looking over the entire page.

3. Sub-topics

   Many of the long articles are divided by sub-topics in heavier, larger type. These headings help you find the part you want to read.

4. Cross reference

   This is the same as the cross reference cards in the card catalog. If information about your subject can be found in another place in the encyclopedia, the cross reference will tell you where to look. This is found at the end of your article. Always make use of this to find additional information. You can also find extra material by looking up articles listed as "related subjects". This is also found at the end of your article.

5. Study Guides

   Some encyclopedias may have a special volume with all major topics organized in a special guide. To use this guide, you would look for your subject under the major subject area. You would then find the volume and page where you would find information on that subject.

   The *World Book Encyclopedia* has such a study guide.

   Encyclopedias are very useful and will give you a great deal of help, but *do not* rely on them for all your research. Remember, they are just *one* source of information.

V. Atlases and Gazetteers

An atlas is a book that is made up of a collection of maps to illustrate a subject. Because there are many subjects that use maps, there are many types of atlases. A gazetteer is a type of geographical dictionary. Sometimes these are both combined into one book. A good atlas will also have an index to help you locate the information you wish to find.

Types of Atlases. The most common atlases include: the World Atlas, the Historical Atlas, the United States Atlas, and the Commercial Atlases. Most libraries will have other types too, but you will probably only need to use just those names.

Using the Atlas. There are two important things to remember when using the atlas. First, use the most up-to-date atlas you can find, and second, use the type of atlas that will give you the information that you need. As an example, if you wanted to find out about the battle fields in the Civil War, you would use a Historical Atlas of the United States.

VI. The Almanac

There are different types of almanacs, but most are prepared about the same. The almanac is a type of yearbook that contains information on almost every subject. The most common type of information consists of statistics about different things. You can find the latest information about population, the number of people that voted in the last election, etc. Each almanac will have an index, usually in the front of the book, which will give you the page where you can find the information you are seeking.

Remember, an almanac crowds a vast amount of information into a very short space, so do not expect to find a great deal of information on any one subject.

VII. Choosing a Subject for Study

Please think very carefully when you are choosing your subject. *Once you have begun to work on a subject, it will be your responsibility to see that it is finished before you start something else.* You may want to study something which has long been of

interest to you and about which you already know quite a bit. Or you may want to explore something new. *Whichever you do, make your choice carefully.* Here are some points to think about as you choose your subject.

1. There is very little written information on some subjects. Check your library resources, and be sure you can find plenty of material on your subject.

2. Do not choose a subject that is too complicated for you to understand. On the other hand, do not choose a subject just because you think it will be simple.

3. Do not choose too big a subject. For instance, it would be very difficult to do a good job on the subject of "Astronomy". Choose a small part of it such as "The Sun", "Mars", etc.

A. Bibliography Cards

After you have chosen your subject, I would like you to go to a library and use the card catalog to make a bibliography of the information available on your subject. This will be very helpful to you as you do your reading. Please follow these steps when making your bibliography.

1. Use 3x5 lined index cards.

2. Put only one reference on a card.

3. All cards should be made out as author cards. If the author's name is not given, make a series of dashes on the first line to show this.

4. Every card should state the author's name, the title, and the facts of publication.

5. Use Arabic numbers only, not Roman numerals.

6. You may have three different kinds of bibliography cards - for books, magazines, and encyclopedias. These are samples of each. Please refer to these samples when you make your cards! Be sure you follow the right sample for the kind of literature you are using.

a. Books

570.23
Va

Vance, B.B. and Miller, D.F.,

Biology for you,

J. B. Lippincott Co., Chicago, 1954.

(1) First line - author's full name, last name first. Comma at end of line.
(2) Second line - title of book, underlined. Comma at end of line.
(3) Third line - publisher, place and date of publication. Comma between each and period at end of line.

b. Magazines

Pound, Arthur,

"Tide Pool of Life"

Junior Scholastic, vol. 157, pp. 121-123,
January, 1952.

(1) First line - author's name, last name first.
(2) Second line - title of article in quotation marks.
(3) Third line - name of magazine underlined, volume number written in Arabic numerals, pages, date of magazine.

c. Encyclopedias

Ref. 030

- - - - -

"Animals",

Encyclopedia Britannica,

14th ed., vol. 12, pp. 517-520.

(1) First line - author's name, if you can find it. With most encyclopedias, you will have to use a series of dashes.
(2) Second line - title of article with quotation marks around it.
(3) Third line - name of encyclopedia underlined, edition, volume number, pages.

7. On the lower part of the cards, you may put your comments about the book. You may want to say that the material is out of date, or that it is too difficult, or that the book contains good charts. This information will be most helpful to you when you begin your reading.

8. You should have at least five cards before you begin your reading. Keep these cards! After you have finished your study, you will make a bibliography page for the end of your report. You will need the cards for this. Put them in a safe place, and don't lose them.

9. Make your cards as neat as possible.

10. As you do your reading and come across new books, be sure you make cards for them. Your bibliography should grow throughout your study.

VIII. Suggested Format for Social Studies Note Taking and Reporting; Incorporating Critical Thinking into Research.

A. Make up a series of general questions that you will answer about your subject. Then place the questions in a logical order so that readers can easily understand your topic.
Such questions as:

1. Where is it located, and what is its size?
2. How do the land features affect the lives of the people?
3. How does the climate affect the lives of people?
4. How do the people in the village live?
5. How does life in the city differ from life in the village?
6. What are the mineral resources of the region and how well are they developed?
7. How well developed are the transportation and communication systems of this region?
8. How well developed is the farming and ranching of this region?
9. What are the problems faced by this region today?

B. Change each of these questions into statements or phrases. Such statements or phrases as (if the subject is a region in a country):

1. Location and size.
2. Ways in which land features affect the lives of the people.
3. Ways in which climate affects the lives of the people.
4. Life in the village.
5. Ways in which life in the city differs from life in the village.
6. Mineral resources and their development.
7. Development of transportation and communication.
8. Development of farming and ranching.
9. Problems faced by this region today.

C. Write the statement or phrase on the top line as the heading.

D. Read widely on your subject. Do not take notes as you go, but read a

section, then try to remember and write down its most important points. Use a number of different sources in addition to encyclopedias and atlases. Try to distinguish fact from opinion. This is particularly crucial if your topic is controversial. You may separate your note taking into categories by fact and opinion for each of your main topics.

E. As you find information that goes with one of the headings, write this information, in your own words, under the proper heading. Separate relevant from irrelevant ideas.

F. Add new headings as new questions about your subject arise.
G. Take your notes in phrases or short sentences.
H. Number or put a dash before each new note.
I. Skip a line between each new note.
J. Take your notes neatly.

IX. Outlining

A. Use each heading that you placed on the top line of each sheet of lined paper as the main topic.

Sample main topics:

Location and Size
Ways Land Features Affect the Lives of the People
Ways Climate Affects the Lives of the People

B. Read through the notes you have taken under each heading. You might cut these rough notes apart to arrange them more easily. Select the most important items. These will become subtopics.

Topic: Location and Size
Subtopics
Where it is in the world (subtopic)
Bordered by (subtopic)
Points of reference (subtopic)
Size (subtopic)
Importance of location to the United States (subtopic)

C. The items or facts that tell about the subtopics appear under them as details.

Sample details with subtopics and main topic:

I. Location and Size

A. Where it is in the world

1. The country (detail)
2. The continent (detail)
3. The hemisphere (detail)

B. Bordered by

1. Other regions (detail)
2. Bodies of water (detail)

C. Points of Reference

1. To major United States ports (detail)
2. To major ports in Latin America (detail)
3. To major ports in Europe (detail)

D. Size

1. In square miles (detail)
2. Compared with other regions (detail)
3. Compared with country located in (detail)
4. Compared with neighboring countries (detail)
5. Compared with the South American continent (detail)
6. Compared with the United States (detail)
7. Compared with a state or region in the United States (detail)

D. Check with your teacher and language book if you have difficulty in constructing your outline.

X. The Display and its Importance in Oral-Visual Reporting.

A. The display is an important part of the report.

B. Effective visual material (graphs, charts, diagrams, pictures, maps, dioramas, shadow boxes, roller movies, scrapbooks, models, collections, experiments, cards) could be prepared on important points.

C. Good visual material is extremely helpful in holding the attention of an audience.

D. Visual material selected to be part of your oral-visual report should be of a size that is meant to be viewed at a distance.

E. Visual material should be selected on the basis that it highlights and helps to make important points clear.

F. On the back of the visual material that is to be used in the oral-visual report write any information that will be helpful as you show the material.

G. Important or unusual names, places, or ideas can be placed on cards and shown to your audience as you refer to them.

H. When talking about a product or a custom, it is wise to use a clearly labeled picture or model.

I. Maps of places in the world should be kept simple, illustrating only those ideas you want to get across.

J. A good use of graphs and charts can help make your report clear and effective.

K. Make sure your visual materials support the report.

L. Large pictures, maps, and other illustrative material can be sent for from sources of free and inexpensive materials.

M. Old magazines and newspapers offer a wealth of visual material. Pictures cut from these sources should be well mounted.

N. If you are in doubt about when to use visual material, ask yourself if words alone will put across an idea or if display material will be necessary to make your thoughts clear.

XI. Oral-Visual Reporting

A. Much of the success of your report will be decided before you say your first word to your audience. How thorough was your research? How well are you at home with your subject?

B. If you are still at the "I will have to read every word when I report" stage, your knowledge of your subject is rather slight.

C. Equally bad is memorizing your report. This is, in a way, the same as reading it from your mind. It is important that you know your subject so well that you feel as much at home with it as you do riding your bicycle. In short, understand what you're reporting. Be able to tell a friend or your parents about it without notes.

D. You will know much more about your subject than you will have time to report, so your report needs to be carefully organized. Select those items that seem most interesting and important to include in your oral-visual report. Don't try to tell everything you know. Allow your display to tell about the rest of your specialty. During the question period you will have plenty of opportunity to show how well informed you are on your subject.

E. From your outline select those items your report is going to deal with. Jot these items on three-by-five index cards. This will allow you some notes to refer to as you present your oral-visual report.

F. Select from your display material (graphs, charts, maps, mounted pictures, models) those items that best go with your subject.

G. Practice giving your oral-visual report. Add and subtract items from your outline and display material as they seem to fit or not to fit. As you practice giving your report, work in your visual material.

H. Select only visual material that will help you illustrate important points or highlight your report. Use visual material when words alone do not seem to make clear what you are trying to say.

I. Do not put all your visual material either at the beginning or at the end of your report. Locate the visual material in your report so that these illustrations are used with the words or ideas they are meant to clarify. Have the words and pictures go together.

J. Have a well prepared first sentence. This will help you get off to a good start.

K. Look at your audience as you report. Talk directly to them. Do not look at the floor, ceiling, table top, or try to hide behind your notes or display material.

L. Try to be as relaxed as possible.

M. In presenting your report, speak in a clear strong voice so all can hear you, and slowly enough so that all can understand you. Hold your visual material so all can see it. Pause from time to time to allow an idea to reach the audience.

N. When presenting a new word or idea you will have to report this new word or idea several times if it is to mean anything to your audience. Showing a word on a card is a way of repeating the word that is not just saying the word over again.

O. Conclude your oral-visual report with a short summary.

P. Just as it was a good idea to have a prepared first sentence, it is also a good idea to have your last sentence worked out in advance. When you have said what you have to say, it is time to use your prepared last sentence. Don't say another word. If you do you might go on for another ten minutes and spoil a good report.

XII. Social Studies Written Reports

When you have completed your notes, you are ready to write your final report. This is a finished product toward which you have been working ever since you began your bibliography cards, so do it as well as you possibly can. The following steps will tell you how to complete your written report.

1. Organize your notes. You wrote your notes according to an organized plan, so that you could keep all the similar facts together. The way in which you organize your material is up to you. If you were studying birds, you might want to put all the information about robins together, all about bluejays, etc. Or, you might want to have a section on wings and describe the wing of each, then one on nests describing the nest of each, etc. Organize your material in any way you wish, but choose one way and stick to it throughout your report.

2. Be sure your report has a title.

3. Write an interesting introduction to your report. This will make people want to read what you have written. You may want to write your whole report in story form; this will make it much more interesting to read. You can use your imagination and write any kind of a story you want, as long as you include the facts from your notes. *Your report should be your own original work.*

4. In your report, include all the information that is in your notes. Don't shorten them or pick out only the most interesting facts. This should be a complete paper telling *all* that you have learned about your topic. Your notes were not to be written in complete sentences, but your report must be. Be sure you write proper sentences!

5. Have a good ending for your story or report. Make it sound as if you have finished, not as if you have just become tired and stopped writing.

6. It is a good idea to write the first copy of the report in pencil and have it corrected. Your teacher will help you correct your grammar and punctuation and will encircle misspelled words. Find these words in the dictionary, and write in the corrected words.

7. After the pencil copy has been corrected, you are ready to write your final copy. This should be written in ink on one side of the paper. It may also be typed. Leave wide enough margins so that it can be put into a folder without covering up any words. Make it as neat as possible. If you are apt to make mistakes doing it at school, you may write this copy at home.

8. It is a good idea to make some kind of cover for your report. This will keep it from getting torn or wrinkled. You can buy a cardboard folder, or make one from construction paper.

9. The last page of your report could be a bibliography of all the books you have used. Please list only the books you actually used. The bibliography should be divided into sections for books. magazines, encyclopedias. Follow this form:

Books -

Author, Title, Publisher, place of publication, copyright date.

Magazines -

Author, "Title of Article", Title of Magazine, volume, date.

Encyclopedias -

"Title of Article", Title of Encyclopedia, edition, volume.

Arrange the books and magazine articles alphabetically by the author's name.

BUILDING AN INTELLECTUAL CLIMATE FOR SOCIAL STUDIES

Activities and techniques employed by teachers in the classroom may suit a variety of purposes. The same activity used in different ways may lead to a number of objectives. The purposes best served by these activities depend in part upon the personal characteristics of the teacher, the composition and the maturity of the class, previous experiences of the group, the context in which the activity is employed and a number of other variables beyond the scope of the present discussion. Social studies processes may be developed in a variety of classroom situations whether the logical design of the lesson is deductive, inductive or a combination of the two. If our aim as educators is to give students a firm grasp of history and the social sciences, together with the skills and attitudes necessary for autonomous thinking and responsible action, then our "classroom," whatever else it is in nature, must manifest intellectual honesty. Critical to the development of social studies processes is an intellectual climate in which both the teacher and the student feel a sense of *responsibility* and *commitment* (involvement) to the process of systematically searching, weighing and evaluating.

PROCESSES IN THE NEW SOCIAL STUDIES

Because concepts, generalizations and theories are derived by people and because people both design the observational system and select and group pertinent observations from the system, it is evident that if one is to understand and use concepts, generalizations and theories he or she must understand the processes employed in generating and testing this knowledge. Also, knowledge of these processes will aid in the development of a more efficient and effective teaching-learning situation.

As one considers any one of the following processes it becomes clear that there are many related skills, e.g., map reading and data gathering, which are subsumed under these processes. As a matter of fact, all the skills listed in this guide can be seen as helping in the development of social studies processes necessary for critical thinking. When these skills are seen and used as a functioning whole, one becomes involved with social study or social studies processes.

In subject fields such as mathematics, natural science and social studies, there is reason to suggest that common cognitive processes are, or can be, used even though the ideas mathematicians, natural scientists and social scientists consider, along with their methods of collecting, storing and retrieving data, are different.

Eleven major processes have been identified here which include the great majority of student activities appropriate for school experiences. The terms associated with these processes are:

- Observation
- Communicating
- Classifying
- Inferring
- Predicting
- Formulating Models
- Measuring
- Interpreting Data
- Formulating Operational Definitions
- Formulating Questions and Hypotheses
- Testing Hypotheses

OBSERVATION: Observations can be made in a variety of ways using all of the senses. Where direct sense experience is not adequate for making needed observations indirect methods are used. Objects and events may be observed with respect to many qualities and quantities. When observations are made in order to accumulate data from which inferences will be drawn, the precision of the observations is critical. Observations are influenced by the experience of the observer.

Social observation can take many forms - from viewing a national political convention on television to watching two children behaving on the playground. Observation can be very directive, as when loooking for specific events (factual or procedural); or it can be very nondirective, as when viewing an event and giving an opinion.

COMMUNICATING: In order to communicate observations, accurate records must be kept which can be submitted for checking and rechecking for others. Accumulated records and their analysis may be represented in many ways. Graphical representations are often used since they are clear, concise and meaningful. However, in the social studies, communication must encompass all the spoken and written word to physical gestures.

CLASSIFYING: Classifying is the grouping or ordering of phenomena according to an established scheme. Objects and events may be classified on the basis of observations. Classificational schemes are based on observable similarities and differences in properties which are arbitrarily selected. Classificational keys are used to place items within a scheme as well as to retrieve information from a scheme.

Social classification is manifest in discussing the division of work in the house, or the make-up of a national political party. Classification is useful in that it helps limit or control the data being investigated.

INFERRING: Inference is drawing tentative conclusions about what is not directly or immediately observable. While it may be based on observations, inference requires evaluation and judgment. Inferences based on one set of observations may suggest further observation which in turn requires modification of original inferences. Inference leads to prediction. In the social studies, inferring can take place whenever data are reviewed and an evaluation or judgment is requested. Inferring is necessary in any field of study because of the incompleteness of data.

PREDICTING: Predicting is the formulation of a possible consequence based on experience. The reliability of prediction depends upon the accuracy of past observations and upon the nature of the event being predicted. Predictions are based upon inference. Social predicting is becoming more systematic. Predicting may

enable man to estimate the consequence of his behavior better and to make more rational decisions.

MEASURING: Measuring properties of objects and events can be accomplished either by direct comparison, or by indirect comparison with arbitrary units. However, for purposes of communication, measurement may be standardized. Measuring in the social studies may take many forms, such as the number of persons in the United States or the Gross National Product.

INTERPRETING DATA: Interpreting data requires the application of other basic process skills, in particular, the processes of inferring, predicting, classifying and communicating. Through this complex process the usefulness of data in answering the question being investigated is determined. Interpretations are always subject to revision in the light of new or more refined data. Social problem solving is dependent upon the investigator's ability to interpret data. Through interpreting data we move to decision making (e.g., voting for candidate X or Y; buying more life insurance).

FORMULATING OPERATIONAL DEFINITIONS: Operational definitions are made in order to simplify communication concerning the event, person, or group being studied. An operational definition should contain the minimum amount of information needed to differentiate that which is being defined from other similar phenomena. Operational definitions are based upon the operations to be carried out and the phenomena under investigation and thus are related to that specific investigation.

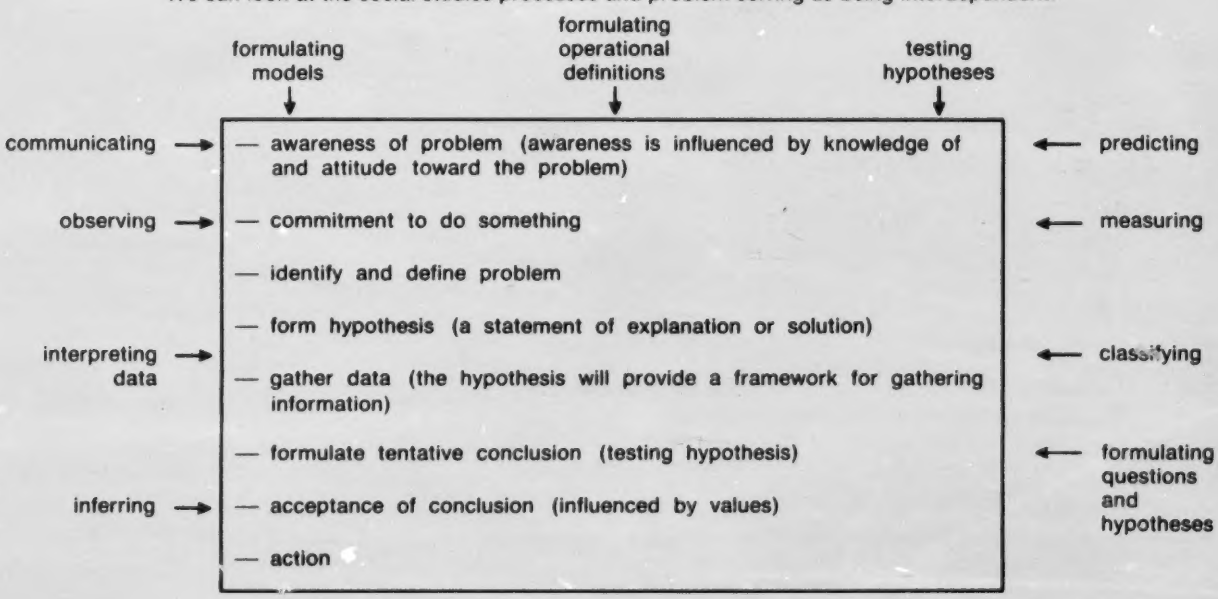
FORMULATING QUESTIONS AND HYPOTHESES: Questions are formed on the basis of observations made and usually preceded an attempt to evaluate a situation or event. Questions when precisely stated are problems to be solved through application of the other inquiry skills of the social studies. The attempt to answer one question may generate other questions. The formation of hypotheses depends directly upon questions, inference, and prediction. It consists of devising a statement that can be tested by a proof process. When more than one hypothesis is suggested by a set of observations, each must be tested separately. A workable hypothesis is stated in such a way that testing can establish its credibility. The inquirer's framework of concepts and generalizations influences the kind and quality of the questions and hypotheses he develops. In the social studies, if the generalization, "If labor is divided, then work is done more efficiently," is testable, it can be called or labeled a hypothesis.

TESTING HYPOTHESES: Testing hypotheses is the process of designing and using data gathering procedures, determining whether the data support the hypothesis. In a less formal sense, the proof process may be conducted simply by making observations. However, even here a plan to relate premises to data is inherent in the process. Among the ways that hypotheses are tested in the social studies are: (1) determining whether the hypothesis agrees with data gathered about persons, events, or situations in other times and places; (2) determining whether the hypothesis is consistent with additional data gathered about the event or situation under study; and (3) determining whether the hypothesis agrees with accepted generalizations.

FORMULATING MODELS: Models, whether physical or mental, are devised on the basis of acceptable hypotheses, or upon hypotheses that have yet to be tested. Models are used to describe and explain the interrelationship of ideas. In many cases the model implies new hypotheses and if testing these hypotheses gives new information, the model must be altered. Examples of model formation in the social studies are: a map, a drawing of an economy's spending system, and a diagram of the political structure of a country.

PROBLEM SOLVIING

We can look at the social studies processes and problem solving as being interdependent.


formulating models
formulating operational definitions
testing hypotheses
communicating
observing
interpreting data
inferring
— awareness of problem (awareness is influenced by knowledge of and attitude toward the problem)
— commitment to do something
— identify and define problem
— form hypothesis (a statement of explanation or solution)
— gather data (the hypothesis will provide a framework for gathering information)
— formulate tentative conclusion (testing hypothesis)
— acceptance of conclusion (influenced by values)
— action
predicting
measuring
classifying
formulating questions and hypotheses

PROBLEM SOLVING GUIDE FOR STUDENTS USING COGNITIVE PROCESSES

I. What is the issue you are investigating? (for example: Does an increase in Wisconsin farm production mean a higher employment level for the total state?)

II. State your opinion (hypothesis). That is, what do you think about the issue now, before you have fully investigated it. Try to make this a one sentence statement.

III. Now collect some information about the issue and make a list of it. You may want to use the sound filmstrip, the student readings, and newspapers, magazines, books, and other sources in your school. Make sure you identify the source of each piece of information on your list.

IV. Now organize your information so that it will be easier to deal with. One way to do this is to go back to what you listed under III. Put a plus beside each piece of information that supports your hypothesis; put a minus if it seems to reject your hypothesis; put a question mark if it seems to suggest that you change your hypothesis a little; strike through the statement if it doesn't seem to have anything to do with your hypothesis.

V. Now you are ready to analyze your information. You may want to do this with several other students. Some questions you may want to consider about each piece of information are:

A. Do other students have similar information?

B. Do others have information that refutes what you have?

C. Is your information accurate?

D. Can you identify certain assumptions the data implies?

E. Does the data conflict with accepted principles and/or theories?

F. Does the data come from a source of established creditability?

G. Can you detect propaganda techniques being used in any of the data?

H. Can you identify different values positions your data implies?

I. Does the data raise some definitional issues?

J. Is the data relevant to your hypothesis?

K. What is the source? Does the source have a point of view or a bias?

L. Is the information factual or an opinion?

M. Is the information important or just a minor point?

VI. You are now ready to pull all of the information together. This is called synthesizing. As a result of gathering, organizing, and analyzing the information can you decide what side of the issue the weight of the information is on? Can you sum it up? In other words, in a few sentences, can you state or write, "In general, my information seems to show that..."

VII. Now state your conclusion (generalization). In other words, what do you think about the issue now? Try to write in one sentence. Is your conclusion the same as your original hypothesis? Is your conclusion based upon your data and analysis? Is it the opposite of your original hypothesis? Is it somewhere in between? State or write at least five reasons for your conclusion.

VIII. Now evaluate what you have done. What have you learned about the issue? What have you learned about how to examine an issue?

PART THREE

TIME AND SPATIAL RELATIONSHIP SKILLS

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TIME AND SPATIAL RELATIONSHIP SKILLS

Major Skill Area	Examples
Making Use of a Calendar	1. Identify origin and purpose of the calendar. 2. Identify the year of a particular calendar, the number of months in the year and the number of days in each month. 3. Become familiar with various uses for calendars: appointments, holidays, planting times for vegetables and flowers, historical events, and so forth.
Relating Dates to Personal Experience	1. Know your birthday and some important events which have happened on it in the past. 2. Identify the important holidays on a calendar. 3. Keep a calendar of appointments and things you want to do each day. 4. Associate the moon cycle with calendar days.
Develop Critical Thinking about Events and Dates	1. Ask students simple questions such as: "Why does school begin in September and end in June?" "Would another way be better?" and more complicated questions such as: "Why did World War II (or some event they are studying) occur when it did and not ten years earlier?" 2. Ask students to figure out criteria for deciding on what date to hold a particular event (party, concert, etc.). 3. Help students to associate holidays or events of the present with past events (May Day celebration originating with the struggle for the eight hour day in the 1880's, for example).
Developing and Using Vocabulary of Time Expressions	1. Short time, long time 2. Currently, presently, momentarily 3. Future, past, present 4. A little while 5. Soon, shortly
Placing Related Events in Chronological Order	1. List in order 10 activities you have done for fun over the last six months. 2. Make up a time line of important events in you and your family's life together. 3. List the steps leading up to the _____ (whatever event they are studying in history or science).

PART FOUR

SEQUENTIAL STEPS IN ACCURATE INTERPRETATION AND CONSTRUCTION OF TABLES AND GRAPHS

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SEQUENTIAL STEPS IN ACCURATE INTERPRETATION AND CONSTRUCTION OF TABLES AND GRAPHS

MAJOR SKILL AREA	TABLES	GRAPHS
ABILITY TO IDENTIFY THE PURPOSE OR TOPIC OR A TABLE OR GRAPH.	1. Locates the title of the table. 2. Identifies the purpose or topic of the table.	1. Locates the title of the graph. 2. Identifies the topic or purpose of the graph through use of the title.
ABILITY TO INTERPRET INFORMATION PRESENTED IN A TABLE OR GRAPH.	3. Locates the vertical columns of the table. 4. Identifies the units used in each vertical column of the table. 5. Locates the horizontal rows of the table. 6. Identifies the units used in each horizontal row of the table. 7. Finds specific facts through proper use of the table columns and rows. 8. Interprets the table to find the most, least, largest, smallest, etc.	3. Locates the vertical axis of the graph. 4. Identifies the units used in the vertical axis of the graph. 5. Locates the horizontal axis of the graph. 6. Identifies the units used in the horizontal axis of the graph. 7. Finds specific facts through proper use of the graph's horizontal and vertical axes. 8. Interprets the graph to find the most, least, largest, smallest, etc.
ABILITY TO DRAW CONCLUSIONS FROM INFORMATION PRESENTED IN A TABLE OR GRAPH.	9. Forms generalizations based on data given in the table. 10. Predicts trends or tendencies that go beyond data given in the table.	9. Forms generalizations based on data given in the graph. 10. Predicts trends or tendencies that go beyond data given in the graph.
ABILITY TO TRANSLATE RAW DATA INTO SIMPLE TABLES OR GRAPHS.	11. Recognizes a table as a method of presenting quantitative data. 12. Recognizes data suitable for table (tabular) presentation. 13. Selects appropriate units for use in presenting data. 14. Translates data into the selected units in order to construct a table. 15. Constructs a table from appropriate raw data.	11. Recognizes a graph as a method of presenting quantitative data. 12. Recognizes data suitable for graphic presentation. 13. Selects appropriate symbolic units for use in presenting data. 14. Translates data into the selected symbolic units in order to construct a graph. 15. Constructs a graph from appropriate raw data.
		ADDITIONAL SKILL INFORMATION IS LISTED ON PAGES 131 AND 132

	Spelling Tests				
	1	2	3	4	5
Dora	85	63	94	72	91
Jane	96	78	84	92	80
Tom	72	53	68	65	72
Bob	81	69	74	83	63
Jack	67	73	83	78	82
Ruth	73	66	56	66	74

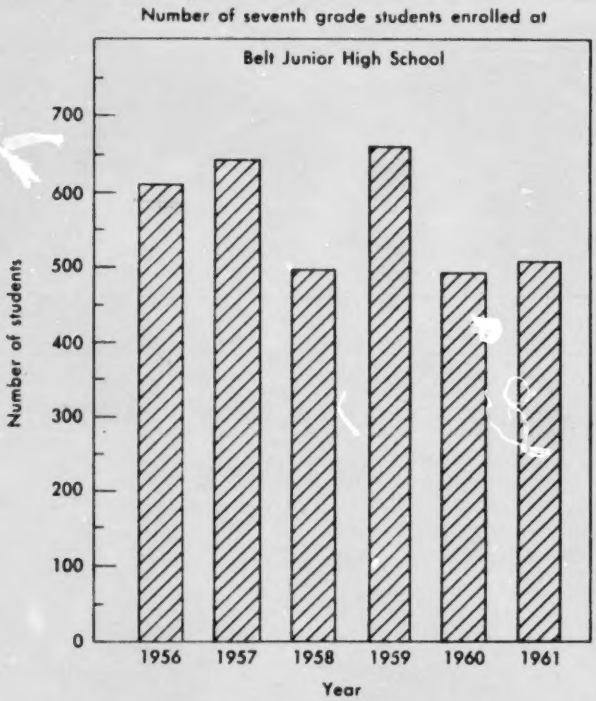
Weather Report—January		
City	Number of Days	
	Cloudy	Clear
Buffalo	22	2
Chicago	15	10
Cincinnati	16	10
Duluth	12	9
Kansas City	13	11

Per Cent of Students Absent Each Day One Week from Four Junior High Schools in Altown					
School	Mon.	Tues.	Wed.	Thurs.	Fri.
A	3	2	1	2	4
B	4	7	3	5	6
C	2	4	1	3	2
D	3	8	4	4	6

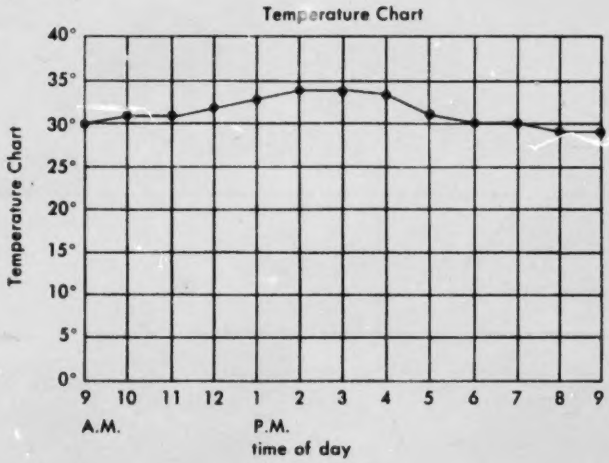
Speeds in m.p.h. of Four Airplanes at Six Different Points in a Cross-Country Race						
Plane	1	2	3	4	5	6
W	530	530	520	540	550	540
X	550	570	600	560	580	590
Y	470	490	510	500	510	520
Z	560	570	580	590	580	600

GRAPHS

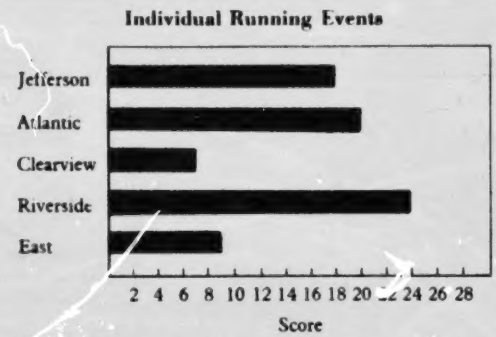
A GRAPH USES PICTORIAL REPRESENTATION



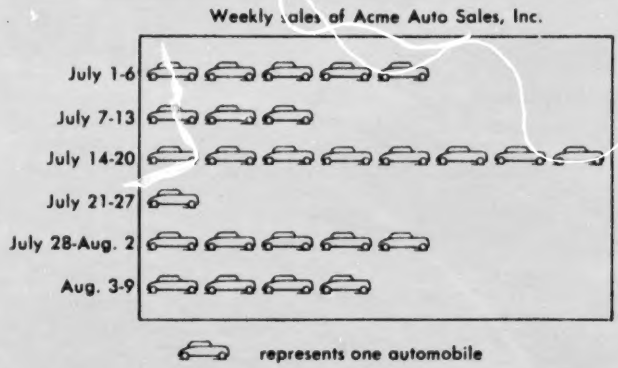
VERTICAL BAR GRAPH



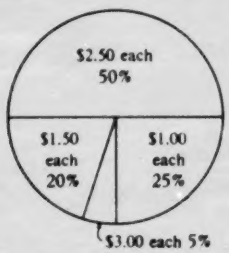
LINE GRAPH



HORIZONTAL BAR GRAPH

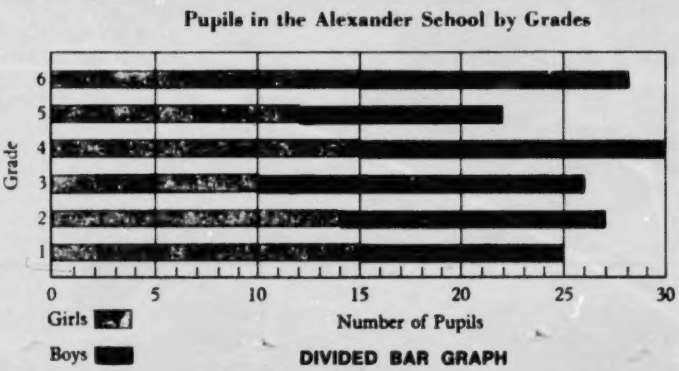


PICTOGRAPH



Prices of
Playhouse Seats

CIRCLE GRAPH



DIVIDED BAR GRAPH

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PART FIVE

SKILLS IN DEVELOPING INTER-PERSONAL RELATIONS AND GROUP PARTICIPATION

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SKILL

Willingness To Accept People's Differences

Suggested Grade Level	Name and Description of Activity
K-3	Talk about reasons older brothers and sisters may resent having their younger brother tagging along. Do younger kids resent older kids being able to do and go more places than they go? (Feelings) The teacher should help children draw comparison from films, stories, filmstrips, reports, etc. on foreign holidays and foreign children.
4-6	A class divided "Blue Eyes-Brown Eyes." The children in the class are divided according to eye color or height, wearing glasses, etc.—then one group is given favoritism—first in line or extra recess, etc. Discussion of why the preferential treatment and how it feels to be discriminated against.
7-12	**Rumor Clinic:** select a picture of some event that is timely and may be controversial. Suggested: old white man moving down a crowded street walking through a crowd of several black young people. Select five students-one remains and views the picture, the other four remain outside the class, the first then tells what he saw from the picture, who in turn tells the second and so on. **Questions:** Why did the picture change so drastically from the first person who actually viewed it to the version of the last person? **Accept Others Differences:** Imagine that you are riding in your car with your parents and you see a boy and girl hitching a ride. Boy long hair, beard, neither wearing shoes. In a sentence or two write down what thoughts pass through your mind as you drive past. Get student replies: word or phrases which describe them are compiled on the board. Ask class to get into groups of five. Tell class that groups of five would no longer qualify. New rule: group can only have four members. QUESTIONS: How did you feel when I asked you to get into groups? When I told you to reduce from five to four, how did you feel? How did you feel when you found you were still in the group. Ask the rejected members how they felt. Goal: accepting people who appear to be different.*

*Lyons, Harold, *Learning to Feel, Feeling to Learn.* Columbus, Ohio: Merrill Co., 1971. Pp. 206-209.

SKILL

Give and Accept Constructive Criticism

Suggested Grade Level	Name and Description of Activity
K-3	Have the children state whether they agree, disagree, are undecided or simply pass on some statement such as: "Going on hikes is fun for everyone." Teachers should guide students in criticizing others' viewpoints. In small groups, define "friendship." Implement the fact that others accept us in spite of our faults.
4-6	Have a child explain bicycle safety rules; have the rest of the class comment on the explanation. Each child will have a chance to explain some similar activity and be questioned by peers. Be aware children aren't too critical. Have children give individual reports. Ask other children to criticize the persons' skills in reporting. (Ex: not talking loud enough, etc.) Be aware children aren't too critical.

4-12	Students act as directors of skits, or leader of any similar activity which involved students working in groups. After the group has accomplished the task, have them discuss the process and outcome of the group effort, criticizing and supporting each other and themselves.
7-12	Group should consist of about 5-6 people. Have a person acting as the leader of the group to stimulate and guide the group. Students participate in group activities such as research and reporting or discussions of issues or personal experiences such as prejudice they have experienced. Teachers help the group criticize each other and themselves on the way they work together and on their points of view. Teachers need to help students feel these criticisms lead to growth and greater understanding of people and different points of view.

SKILL

Willingness To Accept Views of Others

Grade Level	Name and Description of Activity
K-3	Discuss school, classroom, or playground rules. Discuss reasons for these rules and why the school has these regulations.
K-6	Each child thinks of a time one of his parents praised or punished him for something. Ask him to give the circumstances and ask others to comment on *why* the parent acted in this fashion.
4-6	Value situations—Topics: honesty, affection, respect, etc. (Open-ended stories, which allow students' values to be reflective in the conclusions they arrive at.)
K-12	Discussion Groups for each grade level (approximately 5-6 people). Students are to list as many different interpretations as possible of what they think an individual has "said". Statements are made more complex as the grade level increases.
7-12	1. Have students bring in articles from foreign newspapers if possible, and compare differences in views. 2. Have students bring in articles and editorials from major U. S. newspapers in order to make a comparative study. A comparative study would include length of article, position in paper, use of pix, use of quotes and summary of views. Comparison of editorials and cartoons should be included. 3. Study how religious ideas are reflected in people's life-styles. Use resource speakers as sources of information in order to make comparisons.
7-12	The following book is recommended for teachers of U. S. History. Robinson, Donald W., Editor, *As Others See Us: International Views of American History.* Boston: Houghton-Mifflin Co., 1969

SKILL

Practices Courteous Behavior and Observes Rules of Discussion and Debate

Grade Level	Name and Description of Activity
K-3	1. Children will observe transparencies or pictures. Discuss the ways courteous behavior is shown in the pictures. Group discussion of ways courteous behavior is shown to us at home, school, etc., with and without words.
4-6	1. Have the children make up separate manners for school and home. Discuss the necessities for these manners. The children role-play the listed manners. Use charts for scoring fellow classmates on these various manners (for one week) discuss and evaluate the unit. 2. Develop courteous behavior: invite and introduce people—plan a Mother's Day Tea, send invitations, plan program, etiquette, etc.
7-12	1. Steps in Discussion a. Define the problem b. Analyze the problem c. Collect and organize all necessary facts d. Consider different solutions e. Evaluate your conclusions f. Reporting back to total group. 2. Rules for Debate

OPENING SPEECHES
(10 min. or less)

1st Affirmative	**1st Negative**
FIRST SPEAKER: 1. Defines the terms of the resolution 2. Gives the reasons why the resolution should stand as is.	SECOND SPEAKER: 1. Gives reasons why the resolution should not stand as it is. 2. Attacks the ideas presented in the 1st affirmative speech.
2nd Affirmative	**2nd Negative**
THIRD SPEAKER: 1. Answers remarks of 1st negative. 2. Gives support to arguments of the 1st affirmative. 3. Presents a plan to carry out the resolution.	FOURTH SPEAKER: 1. Attacks the arguments of both affirmative speakers. 2. Reinforces the arguments of the 1st negative. 3. May present a counter plan to change the resolution.

REBUTTALS
(5 minutes or less)

1st Negative: Summarizes the debate so far in the negatives favor.	**1st Affirmative:** Answers the negative and reaffirms the affirmative point of view.
2nd Negative: Gives strong final attack against the affirmative point of view and restates reasons why the resolution must not stand.	**2nd Affirmative:** Gives summary of the debate in his favor thus far and makes a final statement as to why the resolution must stand.

DEBATE JUDGING SHEET

WON_____AFFIRMATIVE LOST_____ NAME 1st_____ 2nd_____			WON_____NEGATIVE LOST_____ NAME 1st_____ 2nd_____	
POINTS 1st	POINTS 2nd		POINTS 1st	POINTS 2nd
		Convincing Arguments 0-10		Convincing Arguments 0-10
		Speaking Ability 0-5		Speaking Ability 0-5
		Preparation, organization quotes, charts, and evidence 0-10		Preparation, organization quotes, charts, and evidence 0-5
		Effectiveness **1ST AFFIRM** Was the resolution clearly induced and analized? **2ND AFFIRM** Did the 2nd affirm adapt to negative arguments? 0-15		**Effectiveness** Did both negatives adapt by answering the attacks as well as refuting the basic arguments of the affirmatives? 0-20
		Rebuttals: General effectiveness of final summary. No new evidence may be introduced unless in direct support of a previous point. 0-10		Rebuttals: General effectiveness of final summary. No new evidence may be introduced unless in direct support of a previous point. 0-10
		Note that point possibilities differ between affirmative and negative on preparation and effectiveness.		Note that point possibilities differ between affirmative and negative on preparation and effectiveness.
		Comments (optional)		Comments (optional)
Team Total of 100 Possible			Team Total of 100 Possible	

SKILL

Planning: How Does an Individual or a Group Organize and Plan a Task?

Grade Level	Name and Description of Activity
K-3	1. Creative Play: plan play for certain action-examples: go to bed, make a cake. Children should notice what parts others play in their task (i.e., parents, friends). 2. Ask a student to explain why we must have rules to play a game such as Duck, Duck Goose, etc.
4-6	1. Have a student give directions to home from school, to another building. 2. Have a student give directions on how to assemble something; for example, a model airplane. 3. Brainstorming is a well-known, widely used problem solving tool. It encourages participants to use their imaginations and be creative. It helps elicit numerous solutions to any given problem, i.e., What shall we name this product? What should I do in this situation? How can we overcome this obstacle? In the area of values, it is very helpful in eliciting alternatives. Rules for Brainstorming 1. No evaluation of any kind is allowed in a thinking-up session. If you judge and evaluate ideas as they are thought up, people tend to become more concerned with defending their ideas than with thinking up new and better ones. Evaluation must be ruled out. 2. Everyone is encouraged to think up as wild ideas as possible. It is easier to tame down a wild idea than to pep up a bland idea. In fact, if wild ideas are not forthcoming in a brainstorming session, it is usually evidence that the individual participants are censoring their own ideas. They are thinking twice before they spout out an idea for fear that they may come up with a silly one and sound foolish. 3. Quantity is encouraged. Quantity eventually breeds quality. When a great number of ideas come pouring out in rapid succession, evaluation is generally ruled out. People are free to give their imaginations wide range, and good ideas result. 4. Everyone is encouraged to build upon or modify the ideas of others. Combining or modifying previously suggested ideas often leads to new ideas that are superior to those that sparked them.
7-12	Have students keep a diary or chart for one week showing how they organize and plan each day (time they set aside for doing homework, for ex., watching television, visiting friends, playing outside, helping with housework, etc.). The chart could also show what activities were planned for them. At the end of the week have them evaluate their ability to organize and plan tasks, to carry out activities that are important to them and to have some control over what they do with their time (for example, do they just drift from one activity to the next or do they decide what they want to do most). After this evaluation, have them keep the chart for another week and evaluate to what extent changes in their behavior have occurred. 1. Role Playing:

Step	Type	Function
1. Warm up	Problem definition	Introduce problem and set climate
	Participation	Focus attention and initiate discussion

Step	Type	Function
2. Select participants	Conceptualization of roles	Get students to feel roles
	Activity—specific	Select participants
3. Set the stage	Activity—specific	Set line of action
	Conceptualization of roles	Restate roles, if necessary
	Activity—specific	Get inside problem situation
4. Prepare the observers	Activity—specific	Assign observation tasks
5. Enact	Participation	Begin role play Maintain role play
	Reflection and summary	Break role play
	Activity—specific	Monitor enactment
6. Discuss and evaluate	Participation	Open up discussion
	Analysis of feelings	Analyze feelings
	Analysis of behavioral reality	Probe reality
	Consequences of action	Analyze events
	Reflection and summary	Summarize ideas
	Behavioral alternatives	Elicit proposals
	Activity—specific	Monitor enactment
7. Reenact	Same as 5	
8. Discuss and evaluate	Same as 6	
9. Share experiences and generalize	Reflection and summary	Summarize ideas

"Those Teaching Strategies for the Social Studies" by Joyce, Weil and Wald. SRA, Chicago, IL, 1972.

2. Versailles Game:

   Divide the class into five groups to study the treaty of Versailles. Have one group check into the personality and characteristics of President Wilson of the U. S. Another group Clemanceau of France. Third group Lloyd George of Great Britain. Fourth group Orlando of Italy. Fifth group into the influences of Lenin—though he wasn't present at the meeting—what part did he play in influencing the four great men present at the meeting?

   Have one or several members take on the roles of the men they are investigating and have them re-enact a mock meeting at Versailles.

3. Plan a Trip:

   Cost, itinerary, time, how to get a passport, how to exchange money, etc.

SKILL

Did the Group Contribute to the Accomplishment of the Task?

Grade Level	Name and Description of Activity
K-3	1. Monster Faces: First draw picture of face. Then children are grouped for special projects. First group for cutting oval shapes for all the children. Second group place facial features on the faces. Third group place hair (confetti) on the face. Fourth group color or paint the faces. Fifth group inspect, examine and if completed satisfactorily, hang on bulletin boards.
	2. Making valentines: The task of making valentines is divided into any number (8-9-10-11) of tasks. The children plan and perform each task. An assembly line will not work well unless each child does their task.
4-6	1. Suggestions for mural or bulletin board Sea Life: Each student contributes his own fish and the entire class fills the water and seascape in. Forest Wildlife: Each student contributes an animal of the forest and the total class designs the trees.
	2. Block Affair Several mini-murals: Students living on the same block draw their block—each filling in their own homes and the group finishes the mural by drawing the rest of the houses on the block.
	3. Panel discussion on a given topic in social studies, science, or whatever.
	4. Do a play on a story from their reading book.
7-12	1. Class Skit: Students are divided into groups for a) writing skit, b) costumes, c) props, d) technical and e) set design. Rehearsals are held where students see the importance of each part in order that the skit be given.
	2. Have the students who are working on a project keep time journals describing the amount of time each student has put into the project and what he or she did during the time. Then compare the journals and discuss the difference in working on the project by doing research and working by just thinking of ways to approach the project or present the project.
	3. In small groups (after a problem is selected), students will be assigned one of Fenton's 9 analytical questions. a) What was the immediate cause for the event? b) Had there been a background of agitation for the principles victorious during this episode? c) Were personalities involved on either side whose strengths or weaknesses may have helped to determine the outcome of the struggle? d) Were any new and potent ideas stimulating the loyalty of a considerable number of people? e) How did the economic groups line up on the issue? f) Were religious forces active?

g) Did any new technological developments influence the situation?

h) Can the events be partially explained by weakened or strengthened institutions?

i) Was the physical environment itself a factor in the situation?

Bulletin board divided into nine spaces, students are to look for pictures illustrating assigned question.

Pictures are then selected and with the use of the Kodak Ektagraphic Visualmaker, a media presentation can be developed.

SKILL

Anticipating Consequences of Group Discussion or Action

Grade Level	Name and Description of Activity
K-3	1. Role play: Where one boy cannot go to the movies because of lack of funds, or is left out of a game.
	2. Discuss safety rules (in school, out of school)
4-6	1. Divide the class into groups. Each group is assigned the same task—such as developing playground rules, classroom rules, dress code, etc.; then each group will be given a chance to enforce their rules for one week. After each group has put its plan into effect, hold a discussion on which rules were workable and which were not.
7-12	1. Consequence Search:

Purpose: The evaluation of consequences is just as important as the search for alternatives; for if we choose an alternative without thinking about the consequences, we increase the risk of making a poor choice. This strategy gives students practice in searching for the consequences of various alternatives.

Consequences Grid

Alternative #1:	Alternative #2:	Alternative #3:

At the top of the grid they are to place, in the appropriate spaces, the three most feasible solutions they developed for one of the vignettes presented in the Alternative Action Search, or the three best ideas from the Alternatives Search. Then, for each of these three alternatives, they are to list as many possible consequences as they can think of. This may be done individually or in groups like those formed during the previous exercises. They could use the brainstorming method for generating consequences.

Having considered the consequences, students are then asked to re-evaluate their positions. They may, individually or as a group, re-rank the alternatives or decide to drop one or more of the alternatives and look for others. If the latter happens, the activity can be repeated with the newly found alternatives.

This strategy can also be used as an independent activity. Then the teacher asks the students to list at the top of the first column an action or decision they would like to

make. At the top of the second and third column they put two alternatives or variations for the action or decision. They then continue as previously described, listing all the consequences and re-evaluating their choices.

Sometimes a student can only think of one possibility in a particular problem. In such a case, he can list that alternative at the top of the first column and put "Not doing alternative #1" at the top of the second column. (Not to choose is also to make a choice; thus, there are always at least two alternatives.) He can then explore the consequences of following and not following his choice.

2. Rocket Ship: The world is about to end; however, there is a chance for a select few to survive on another planet identical to earth. A group of men in Washington must decide upon ten people to go on a fifth rocket to this new planet. They can be professional people if the committee so desires, or non-professional. There will be four other rockets with ten families on each, who were selected by random sampling. Where will the rockets land? Who will be the ten people on the fifth rocket and what supplies would they take with them? The students must answer these questions in 30 minutes.

3. Survival in North Woods: Have the students simulate an "exercise in survival." Each student will receive an hypothetical $100.00 from the Federal government. With this sum he or she is to plan the purchase of everything needed for a three month period while isolated in the remotest part of the Nicolet National Forest in northern Wisconsin. Each student shall make a list of the item purchased, the cost of each item, and the place of purchase. Select several students to read their lists to the class; allow the class to ask questions concerning the reason for purchase or reason why certain necessary items were not purchased.

SKILL

Develop Ability to Listen Carefully

Grade Level	Name and Description of Activity
K-3	Have a child state what he or she had for breakfast or some other simple statement of fact. Go around the group and have several children repeat what the first child said to see how well he listened. Students pick one or two partners to share the interesting points of a holiday, activity, or school for 5 minutes. Then they exchange partners to share another topic for 5 minutes. After this activity, they are asked to close their eyes and think about these topics.
4-6	Divide into groups (4-6). Select any topic for discussion in which students are interested. Anyone may begin the discussion and say whatever he wishes to say on the topic. The second person to speak must repeat the essence of what the first person has said. The first person must approve what the second person has said. If a person cannot repeat what was said before, he is not allowed to offer his own point of view. Rumor Clinic: Five students leave the room while the first child views a picture and describes it to second who can't see the picture. Second child repeats what they have heard to a third child who can't see the picture and so on through re-statements. Rest of the class notices the difference between statements of student No. 1 and student No. 6. (Tape record statement #1 and #6.)
7-12	Public Interview: Get volunteers who would like to be interviewed publicly about their beliefs, feelings, and actions. Teacher asks questions, and answer must be honest but may say *pass* if they do not want to answer. Participant may quit by saying "Thank you"—may also ask the teacher any questions they were asked. Listening Test I: Radio Commercials We usually listen to only about 25% of what someone says. Immediately following on the tape are back-to-back hard hitting radio commercials for which the student is instructed only to

listen. After the two commercials the narrator gives the student 15 seconds to identify the products advertised (a car wax and an engine additive) by writing them on paper. (Fifteen seconds of blank tape is provided as a timing device). Many will not have listened properly and will be unable to name the products. Others, aware that the commercials are part of a listening test, will listen for details while forgetting the products. Most participants respond to this first listening test correctly, or nearly so. The second example is much more difficult.

Listening Test II: Group Discussion

Next on a tape is a one-minute excerpt from an unrehearsed group discussion among three girls. The discussion is about the drama workshop class they take. After the discussion the narrator poses five true-false questions. Three, four, or five out of five correct answers is better than average for this test. The narrator then presents the theory of an "earlid": what we usually call "forgetting" is not really a brain failure, but a psychological mechanism motivated by not wanting to remember.

Listening Test III: Following Directions

To demonstrate this theory of the "earlid" the narrator gives a listening test without warning. Students are asked to write the following on their papers:

I
II A B C
III

(Twenty seconds of blank tape is provided for this exercise.)

Often a surprisingly large number of participants fail to write the Roman numerals and letters correctly. Note that the narrator asks for Roman numerals and the capital letters A, B, and C. If a large part of the group passes the test, they are paying closer than average attention to the tapes.

PART SIX

DEVELOPING QUESTIONING SKILLS FOR SOCIAL STUDIES TEACHERS

Developing Questioning Skills for Social Studies Teachers

The following list contains the most common types of questions that could be asked by teachers in elementary social studies classes.

QUESTION TYPE	SAMPLE QUESTIONS
I. IDENTIFICATION	1. Who is it? 2. What is it? 3. Where did it take place? 4. Can you define . . . ?
II. DESCRIPTIVE	1. What happened? 2. What are they doing? 3. What is going on? 4. How many different kinds are there? 5. How long is it? 6. What did it look like?
III. COMPARATIVE	1. How are they different from each other? 2. How are they similar?
IV. HISTORICAL	1. When did it get started? 2. How did it get started? 3. Has it changed from the way it used to be? 4. What have they found to be true in the past? 5. Which came first? 6. What is their chronological order?
V. CAUSE AND EFFECT	1. What caused him to behave that way? 2. Why did it turn out that way? 3. How could the situation have turned out differently? 4. If_____had happened, what might have been the effect?

VI. PREDICTION	1. What's going to happen next? 2. How will it end? 3. From what you know of the situation, how might it change _____ years from now?
VII. CREATIVE	1. What would happen if I . . . ? 2. What would you do if . . . ? 3. How can we show . . . ? 4. How could we organize . . . ? 5. Can you develop a new way?
VIII. RESEARCH	1. How can we find out? 2. Where can we locate resources? 3. Are these observations reliable? 4. How valid are our data? 5. Where did you get your information? 6. Which are facts and which are opinions? 7. What reason or evidence can you give?
IX. VALUE INQUIRY	1. Which way is best? 2. Is that a good way for things to end? 3. What was the author's purpose, bias or prejudice? 4. For what reason would you favor . . . ?
X. RELEVANCE OR APPLICATION	1. How does this apply to me? 2. How does this idea or generalization apply to other situations? 3. What can we do to apply or implement our conclusions? 4. How can we use these materials?

Taxonomy of Questions

Underlying Ideas

1. All thinking can be classified into seven kinds which have been named memory, translation, interpretation, application, analysis, synthesis, and evaluation.

2. The categories of questions fit all subjects.

3. Every category of questions has easy questions appropriate for young students or slow learners. Every category also has other questions that are challenging enough for bright students.

4. The definitions of the seven kinds of questions overlap somewhat so that equally knowledgeable experts often differ on the best classification of a certain question. This need not bother classroom teachers.

5. By knowing the definitions of the kinds of questions, a teacher can make certain that her students have practice in all kinds of thinking.

*See, *Classroom Questions: What Kinds?* by Norris Sanders, N.Y. Harper and Row, 1966

Memory Questions

A memory question asks students to recall or recognize ideas presented to them previously in reading or listening. Memory questions can require the student to recall a single fact or a much more involved idea.

Examples of Memory Questions:

1. Conditions for this question: The students have read that Washington, D.C. is the capital of the United States.
   Question: What is the name of the capital of the United States?

2. Conditions for this question: The teacher has given the definitions of "solid," "liquid," and "gas." Examples were displayed of each.
   Question: What is the definition of a solid? What is the definition of a liquid? What is the definition of a gas?

3. Conditions for this question: The students have learned the products manufactured in their community.
   Question: Check each of the following that are manufactured in our community:
   _____cement _____aluminum _____automobiles

4. Conditions for this question: The students have drilled on their multiplication tables.
   Question: Solve these problems:

5	2	6
X4	X6	X7

5. Conditions for this question: The students have studied a list of spelling words. The teacher reads the list.
   Question: Spell these words correctly:
   animal
   snowman
   right
   funny
   mouse

Translation Questions

In translation the student is presented an idea and then is asked to restate exactly the same idea in a different way.

Examples of Translation Questions:

1. Conditions for this question: The student has read a paragraph in the textbook.
   Question: Now tell me **in your own words** what you read.

2. Conditions for this question: The teacher has explained how a store owner buys food from farmers and sells it to families in the neighborhood.
   Question: The teacher assigns students to play roles of store keeper, farmers, and family members. In a socio-drama the students are to act out the roles that the teacher explained to them.

3. Conditions for this question: Students have read the story "The Ant and the Grasshopper."
   Question: Tell what happened in the story.

4. Conditions for this question: The teacher displays a picture of men cutting wheat with a scythe.
   Question: Tell what you see in the picture.

5. Conditions for this question: The teacher demonstrates the operation of a siphon.
   Question: Draw a picture of the siphon you were shown.

Interpretation Questions

The question asks the student to **compare** certain ideas or to **use** an idea that he or she studied previously to solve a new problem. The idea may be in the form of a skill, definition, law, rule, or generalization. The student doesn't have to figure out which idea is to be used in interpretation because the question or the classroom context tells this. The question can be in short-answer or discussion form. Usually the answer is quite objective. In other words, there is usually a right answer which the teacher expects the students to reason out.

Examples of Interpretation Questions:

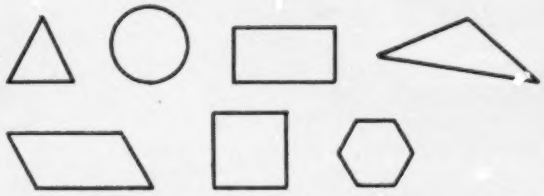
1. Conditions for this question: The students have studied the generalization that warm air rises.
   Question: If you place a thermometer on the top shelf of a refrigerator and another on the bottom shelf, which would show the lowest temperature? Another question on a test the next day: Why don't grocery stores put frozen food onto refrigerated shelves such as those used for the canned goods, rather than containers which are open on the top but closed on the sides?

2. Conditions for this question: The students have studied temperature, rainfall, and topography maps of the United States. They may use these maps in answering the question. In addition they are given a dot map showing where cotton is grown in the United States.
   Question: In what range of temperature, rainfall, and topography is cotton grown in the United States?

3. Conditions for this question:After seeing a film on customs of marriage and bringing up a family in an African society the students are asked:
   Question: In what ways are the marriage and family customs in the movie similar to those in our society and in what ways different?

4. Conditions for this question: The teacher has explained the generalizations that the amount of money men earn depends on such things as the following: (1) jobs which require more training or education usually pay more than jobs which require less training or education; (2) Jobs which require talents which few people have, pay more than jobs which require talents which most people have.
   Question: Which do you think earns most in each pair? Tell why in each case.
   A. A teacher or a window washer_____.
   B. An engineer who designs highways or a truck driver_____.
   C. A house painter or star baseball player_____.

5. Conditions for this question: The teacher has instructed students in the definitions of the shape of a rectangle and a triangle. (The students know their colors.)
   Question: Color all rectangles red and all triangles green. Don't color any other shapes.



Application Questions

Application questions are similar to interpretation questions in that students are to *use* ideas learned previously in problems new to the students. However, application goes one step further. In an interpretation question the students must show that they can use an idea when they are told specifically to do so. In an application question the students must show that they can use an idea when they are not told to do so but when the problem demands it. In other words application calls for the transfer of training to new situations.

Examples of Application Questions:

1. Conditions for this question: In language arts class the teacher has taught students how to use an index and table of contents. Later in a social studies class the teacher asks this question:
   Question: Find the page in our social studies book which tells about Booker T. Washington. (The question would have been interpretation if asked this way: Use the index to find the page in your social studies text which tells about Booker T. Washington.)

2. Conditions for this question: The students have been taught to write complete sentences. Sometime later the class takes a trip to a dairy.
   Question: Write a letter to Mr. Jones thanking him for showing us the dairy. (The teacher expects that students will write complete sentences. The same question would have called for interpretation if the teacher had added, "Be sure to write complete sentences.")

3. Conditions for this question: A class has studied the main regions of the United States. This included consideration of climate, topography, crops, population, vegetation, manufacturing, and agriculture. At the end of the year the teacher displays a half dozen big landscape pictures.
   Question: Study each picture carefully and then name a state in which you think the picture might have been taken. Give as many reasons as you can why you think your location might be in the state you name.

4. Conditions for this question: The students have learned subtraction. In science class the students were studying the hatching of eggs.
   Question: We put the eggs in the incubator on March 4. The first chick hatched on March 25. How many days did it take the first egg to hatch?

5. Conditions for the question: The students have studied the ideas of "specialization" and "division of labor" in their social studies class. The class is going to make 10 identical Christmas window decorations. Each involves about six steps of cutting and folding and pasting.
   Question: How might we organize ourselves to make these decorations most easily? (The question would be interpretation if asked this way: How can we use division of labor and specialization to make these decorations?)

Analysis Questions

Analysis questions are always preceded by instruction in some logical process. Some of the most useful logical processes are classification, induction, deduction, cause and effect, informal fallacies, semantic problems and psychological obstacles to thinking. An analysis question asks the student to solve a problem with a conscious observance of the rules for good thinking of the type called for by the problem.

Examples of Analysis Questions:

1. Conditions for this question: A primary teacher explained to her class that some ideas don't go together (contradiction). For example, it is silly to believe a man is both tall and short.
   Question: What is silly or funny about this story?
   Johnny had one dime. He went to the grocery store and spent the dime to buy candy. Next he went to the drug store and spent the dime for a comic book. After this he was tired so he went home and put the dime in his piggy bank.

2. Conditions for this question: The students have been given explanations of three rules for classification: (A) Vocabulary clear in meaning; (B) Sufficient classes to include all data; (C) Classes discrete.
   Question: What problems do you see in grouping mankind under the headings of white race, black race, and yellow race?

3. Conditions for this question: The class has studied the nature of induction and common errors in induction.
   Question: A geography book stated that the prevailing wind in Wisconsin is from the west. The students in a class in Wisconsin wished to test this generalization inductively. They decided that the prevailing wind meant that the wind came from the west most of the time. During science class every school day for a week they sent a student to look at a weather vane on top of the school and record the wind direction. The results were:

   Monday: West **Thursday: West**
   Tuesday: East **Friday: North**
   Wednesday: South

   The class studied the results and concluded that the geography book was wrong, because, in order for the prevailing wind to be from the west, the results should have shown a west wind on at least three out of the five days. Tell why you agree or disagree with the class conclusion. How would you improve the procedure for testing the conclusion?

4. Conditions for this question: The students have studied induction and the nature of the inductive leap.
   Question: Following are figures on life expectancy at birth in Massachusetts. This state was the only one to gather these figures during the period from 1855 to 1902.

Life Expectancy at Birth in Massachusetts (In Years)	
1900-1902	46.07
1893-1897	44.09
1890	42.50
1878-1882	41.74
1855	38.70

Check all the conclusions that are justified for a historian to draw. Assume the figures are reasonably accurate.

_____ The life expectancy from birth in Massachusetts increased 8.37 years from 1855 to 1902.
_____ Life expectancy rose almost ten years in Massachusetts from 1855-1902 and probably rose comparably in other New England states.
_____ Life expectancy rose in New England from 1855-1902.
_____ Life expectancy was on the rise in the U.S. from 1855 to 1902.

Be prepared to defend your choices.

Synthesis Questions

The question asks the student to create something. The product to be created may be a physical object, a communication, a plan of operations, or a set of abstract relations. In other kinds of thinking there may also be products but the distinctive thing about synthesis is the great freedom students have in deciding what is to be created and how it is to be created. A synthesis question never has one correct response. There are always many good answers which students may work out.

Examples of Synthesis Questions:

1. Conditions for this question: The students have read a story called "Indian Bill." One student said he didn't like the way the story turned out. The teacher then assigned this synthesis question:
   Question: Write a different ending to the story of "Indian Bill."

2. Conditions for this question: A kindergarten class is preparing a Christmas program. The students learn songs and then act out parts of the song. For example, the students crouch and waddle during a duck song. The children learned a new song about an old car which rattles and shakes.
   Question: Think of something we can do which would show how the car might look.

3. Conditions for this question: The students are studying poetry in language and about astronomy in science.
   Question: Write a poem about a star.

4. Conditions for this question: The teacher plays the car music, the duck music, and the wolf music from *Peter and the Wolf* but doesn't play the part of the record which gives the story.
   Question: Tell what each of these three musical selections makes you think of. (After responding the student can listen to the record and see what the composer had in mind. This latter is not synthesis thinking but probably makes the lesson more interesting. The synthesis thinking is the response to the original question.)

5. Conditions for this question: A box is to be inserted into the cornerstone of a new school. The students in a class are in charge of filling the box with things that show what it is like to go to school during that time.
   Question: What do you think should go into the box?

6. Conditions for this question: A teacher suggests that a visit to a local factory would help the class understand more about manufacturing. The teacher says that the class can plan the field trip.
   Question: What must we do to organize the field trip?

Evaluation Questions

The students are asked to make a value judgment of some product, communication, event, or situation. By a value judgment is meant a rating of something as being good or bad; in other cases the judgment is of right or wrong; or perhaps beautiful or ugly. Part of the answer always requires the students to tell what considerations led him to make the judgment.

A value judgment is never provable. The best that can be done is to present good supporting evidence.

Examples of Evaluation Questions:

1. Conditions for this question: Students in a school are putting on a science fair. The sixth-graders have been asked to write an article for the city newspaper telling about the fair and inviting the public to attend. The teacher selects ten of the best articles and runs off enough ditto copies for each student without including the names of the student authors.
   Question: Choose the article that you think should go into the newspaper. Write a paragraph telling why you think it is the best one. (The original writing of the articles is a good example of synthesis.)

2. Conditions for this question: The students are studying about using the library.
   Question: Suppose a boy took a library book home and left it on the floor of the living room. His little brother found the book and tore out some pages. Do you think either boy should be punished? Tell why.

3. Conditions for this question: The teacher displays five contrasting pictures.
   Question: Which do you think is the prettiest? Tell why you chose the one you did.

4. Conditions for this question: The students have studied the colonial period of United States history.
   Question: Did the colonists do right in throwing the tea over-board at the Boston Tea Party? Tell why.

5. Conditions for this question: The students have read a story about two brothers. One is a good athlete but a poor student. The other is a good student but clumsy and weak.
   Question: Which of these brothers would you rather be? Tell why.

More information, resources, bibliographies and consultant help on skill development can be obtained by writing to:

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